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CONSTRUCTION AND EQUIPMENT

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CONSTRUCTION

DISTINCTIVE FEATURES OF NEW FIVE-YEAR PLAN FOR CONSTRUCTION EXPLAINED

Moscow EKONOMIKA STROITEL'STVA in Russian No 1, 1981 pp 3-7

[Editorial: "On the Path to New Accomplishments"]

[Text] The country of the Soviets has entered a new decade--the 1980's. The Soviet people, under the experienced leadership of the Leninist Party, implementing the economic strategy produced by the 24th and 25th CPSU congresses, has achieved further successes in creating the materials and equipment base for communism and improving the welfare of the Soviet people. Capital construction has an enormous role in this.

Capital investment in the national economy during the 10th Five-Year Plan reached 635 billion rubles. Fixed capital increased 1.4-fold. More than 1,200 large industrial enterprises were put into operation.

Capital investment in agriculture, for the whole complex of operations, was more than 170 billion rubles, or more than 27 percent of total capital investment in the national economy. Construction work was done on a large scale for irrigation and land-reclamation. Construction of the Baykal-Amur Mainline continued.

Housing was built on a wide scale. Capital investment in the amount of 87.2 billion rubles, more than had been contemplated under the five-year plan, was devoted to this purpose. During the five-year plan 530 million square meters of housing space were constructed. Housing conditions were improved for more than 50 million people. Right now about 80 percent of the urban populace lives in separate apartments.

At the same time, achievements in developing the economy and in solving social problems could have been more meaningful had the advantages of the planning activity been used more completely, economic reserves brought more actively into circulation, and a more persistent struggle waged against deficiencies. In particular, dispersion of capital investment was not overcome, and time spent building and introducing production facilities was prolonged. The mechanism for control and planning, economic methods, and the level of executive and labor discipline lagged behind modern demands.

Results as a whole for the expired five-year plan testified that our country has forged ahead in all areas of economic and social development. The 10th Five-Year will occupy a deserving place in the history of the heroic affairs of the Soviet people.

The Soviet Union is entering the 1980's with a powerful economic, scientific and technical potential and highly skilled personnel at its disposal. The goals reached in the area of economic and social development will enable tasks to be completed on a still wider scale.

During the 1980's the Communist Party will consistently continue to implement its economic strategy, the highest goals of which are a steady rise in the material and cultural level of the people's lives and the creation of better conditions for the all-around development of the person, based upon a further rise in the effectiveness of all social production, an increase in labor productivity, and growth of the social and labor activeness of the Soviet people.

The 11th Five-Year Plan will be an important stage in the realization of long-term tasks. It has been called upon to incorporate continuity of the policy of social and economic development of the country and the party's strategic aims for the 1980's, taking into account the specifics of the next five-year period.

The main task of the 11th Five-Year Plan is to support further growth of the Soviet people's welfare, based upon steady, progressive development of the national economy, an acceleration of scientific and technical progress, conversion of the economy to the intensive path of development, more rational utilization of the country's production potential, the saving in every possible way of all types of resources, and an improvement in work quality.

Guided by the CPSU Program and decisions of the 24th and 25th party congresses and relying upon the successes achieved in developing Soviet society, the CPSU Central Committee's draft for the 26th party congress, "The Main Directions for Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990," was worked out. This document is of enormous theoretical and practical significance. It generalized experience in constructing communism in the USSR, considers the experience of other socialist countries, and embodies the CPSU's strategy and tactics on the most important questions of economic and social development as applicable to the specific environment of the 1980's. Enthusiastically approving the CPSU Central Committee's draft, the Soviet people are actively taking part in a nationwide discussion of this historic document.

The main task of capital construction during the forthcoming stage is a further buildup of productive potential of the new industrial base, as well as the development of the nonproduction sphere. Capital investment in the national economy through all financing sources is to increase by 12-15 percent during the five-year plan. Capital investment is to be directed primarily toward the rebuilding and technical reequipping of enterprises and the completion of previously started construction projects. The construction of new enterprises and the expansion of existing ones will be started where the national economy's requirement for a given type of output cannot be met by improving the use of existing production capacity, giving due consideration to rebuilding and reequipping that capacity.

The CPSU Central Committee's draft, "The Main Directions for Economic and Social Development During 1981-1985 and During the Period up to 1990," emphasizes that it is necessary persistently to achieve a radical improvement in construction and to raise investment effectiveness. To devote the main attention to providing for the timely introduction of fixed capital and productive capacity into operation. To concentrate capital investment and material resources on the most important projects. To restrict the number of facilities being erected simultaneously and to introduce production capacity and facilities into operation uniformly throughout the year. To bring the amount of uncompleted construction and reserves of uninstalled equipment down to the norms during the coming years.

As an important step in implementing the foodstuffs program in accordance with the decisions of the October 1980 CPSU Central Committee Plenum, it is planned during the 11th Five-Year Plan to allocate to agriculture the appropriate capital investment, the share of which in all funds directed toward national economic development should be no lower than the level of development achieved. In so doing, the effectiveness of capital invested for production purposes must be raised in every possible way.

The construction in the countryside of housing with amenities, children's preschool institutions, clubs and other facilities for cultural and everyday-living purposes will be executed at an outstripping rate. Capital investment for these purposes is being increased by 25-30 percent. The provisioning of rural communities with centralized heat supply, piped water and sewerage will be increased. The scale of construction of hard-topped roads on farms will be expanded.

The Soviet people's housing conditions will be improved progressively, and the comfort of the housing and the level of its amenities will be raised. It is planned to put into use 530-540 million square meters of total housing space, first priority in the construction thereof being accorded to providing housing for workers of newly created enterprises and regions that are being developed and in the countryside. New state housing will be distributed, as a rule, on the principle of allocating a separate apartment to the family.

Attention to questions of the integrated buildup of cities and settlements will be intensified, and conversion to the construction of housing based upon standard designs, with improved layout of apartments and better conditions for operation thereof, will be completed.

It is planned to raise the role of cooperative housing construction in the further improvement of the people's housing conditions, to expand opportunities for individual construction of housing, especially in small towns, urban-type settlements and the countryside, and to extend assistance to workers engaged in cooperative and individual housing construction through the incentive funds of associations and enterprises.

It is planned to build preschool institutions for no fewer than 2.5 million children.

Soviet builders will participate in acceleration of the buildup of the eastern regions' economic potential and the execution of major operations for assimilating their natural resources and for developing fuel, power and raw-material bases in Siberia and Kazakhstan. It is planned to concentrate here the construction of energy-intensive production facilities, to intensify development of the construction base, the construction of housing, municipal facilities, facilities for cultural and everyday-living purposes, farms and facilities for the production of machinery and equipment for the leading branches of the economy of the eastern regions, and to increase, on that basis, comprehensiveness of the development of the economies of these regions and manpower for them.

In the Nonchernozem Zone of the RSFSR, execution of the integrated program for transforming it into a region of highly productive land cultivation and animal husbandry and for developing the branches of industry connected therewith will be continued. The construction of housing, highways and facilities for social, cultural, municipal and everyday-living purposes is to be performed at an outstripping rate.

Special attention has been paid to the need to improve design and budget-estimating matters and to build in accordance with the most progressive and economical designs, calling for a rise in their effectiveness based upon use of the achievements of scientific and technical progress and advanced experience and a saving of materials and of labor costs in construction. It is necessary to raise the quality of layout, architectural and constructional solutions, to reduce the cost of erecting buildings and structures, including housing, and to reduce specific capital investment per unit of capacity put into operation by intensifying the responsibility of ministries, agencies, consultants' organs and design, development and scientific-research organizations for providing a high engineering and economic level of design solutions and for correctly determining the budget-estimated cost of construction.

The execution of new major tasks will be aided by the use of contract and economic methods for doing construction and installing work and by the development in all possible ways of progressive forms for organizing construction--completely outfitted modules, rotating-duty methods, the component method, and other methods, and by promoting the dissemination everywhere of the start-to-finish flowline brigade contract, which is based upon raising the level of engineering preparation and of outfitting with complete sets of operating equipment.

Much attention will be paid to strengthening the supply and equipment base of capital construction and to improving the manning thereof with skilled workers. It is necessary to achieve a correspondence of the capabilities of contracting organizations with the amounts of construction and installing work they are to perform, especially in regions of concentrated construction.

It is especially important to increase the machine-to-worker ratio, to take steps to greatly reduce the use of manual labor in construction, to equip construction organizations with highly productive machinery, mechanisms and motor-vehicle transport, and to improve its utilization by increasing the use of shiftwork. To expand output of the complex of machines for doing construction work under actual operating conditions. And to improve the supplying of construction organizations with equipment for small-scale mechanization and with powered tools and hand tools.

It is planned that the construction, road and municipal machinebuilding sector will create highly productive machines for integrated mechanization of the main work at all stages of construction operations, master the output thereof, and speed up the output of high-powered self-propelled machines for excavating and moving soil and new types of equipment for mechanizing tree-felling, land-reclamation construction and municipal services.

It is necessary to raise the technical level, to expand the products mix and to increase the production of powered tools and hand tools for construction and installing work and of construction-finishing machines, to speed up the creation and development of the serial output of integrated industrial lines and equipment for the manufacture of building materials, articles and progressive prefabricated structure, and to increase the production of highly productive automatic lines for obtaining cement by the dry method.

The level of industrialization of construction work and the degree of factory manufacture of constructional structure and parts are to be raised, and the use of new and effective structure is to be expanded. The local building materials of rural areas are to be used more completely. The output of progressive reinforced-concrete, metal and glued-wood structure is also to be increased, the development of an industrialized base for rural construction is to be speeded up, and the output of sets of lightweight industrialized structure that has a high degree of factory preparation is to be increased.

It is necessary to support the further development and the technical reequipping of housing-construction combines, to use their capacities more completely, to increase the share of construction of large-panel and box-module housing in the overall housing-construction volume, and to develop the capacity of regional construction and installing organizations in areas of concentrated construction as well as the network of mobile construction and installing organizations and mobile packaged construction-industry bases.

These and other measures have been called upon to support a 15-17 percent increase in labor productivity in construction.

It is planned to increase output volume by 17-19 percent in the industry that produces building materials and constructional structure and parts by calling for the preferential development of the production of articles that will support a reduction in metals intensiveness and in the cost and the labor intensiveness of construction and the weight of buildings and structure and an improvement of their thermal insulation.

With a view to improving management, it is necessary to develop and implement a master scheme for the management of capital construction, to determine with precision the spheres of activity of the construction ministries, to reduce the number of management levels and the number of small independent organizations, and to develop the network of producing construction and installing associations that are doing construction work in integrated fashion and are turning over capacity and facilities for operation in the same fashion.

Much is to be done to intensify the influence of the financing and credit-granting mechanism and to build facilities more widely through bank credit, which is granted to building organizations in the amount of the full budget-estimated cost of the enterprise, with completely ready enterprises to be turned over to the client.

The regime of savings during operations must be intensified and measures must be developed and executed to eliminate losses, to strengthen cost accounting in all elements of the economy in every possible way, and to provide for savings of 7-9 percent of rolled ferrous metal and lumber and 5.7 percent of the cement in construction work. The prime cost of output and of operations should be reduced, and profit in construction should be increased about 1.3-fold. The middle management link in construction must be converted to cost accounting.

The CPSU Central Committee's draft for the 26th party congress, "The Main Directions for Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990," is the basis for making up the state plan for the 11th Five-Year Plan. Socialist competition will have an enormous role in carrying out the tasks of the new five-year plan.

Nationwide socialist competition for realization of the 11th Five-Year Plan, for complete mobilization of production reserves, for the most rapid introduction of the achievements of science and technology, and for the rational use of everything that has been created by the people's labor is to be promoted with new effort. Advanced management experience exists everywhere, and it must be made the property of all enterprises and organizations.

Under the leadership of Lenin's party, the Soviet people will achieve new successes in building communism, in solving a large number of economic and social problems, and in strengthening the might of our motherland.

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DETAILS OF PLAN FOR 1981 CONSTRUCTION OUTLINED

Moscow EKONOMIKA STROITEL'STVA in Russian No 1, 1981 pp 7-14

[Article by A. O. Stepun, deputy chief of the Consolidated Department for Capital Investment of USSR Gosplan: "Capital Construction During the First Year of the Five-Year Plan"]

[Text] Our country has entered a new stage in executing the party's economic strategy, and practical realization of the program for developing the national economy in accordance with the state plan for 1981, which was confirmed by a session of the USSR Supreme Soviet in October of last year, has started.

On the threshold of the 11th Five-Year Plan, collectives of enterprises, organizations and construction projects and the whole Soviet people are summing up the results of the last five-year plan, are deeply analyzing the results of the work done, and are making active preparations for a worthy greeting for the 26th CPSU Congress.

In speaking about 10th Five-Year Plan results at the October 1980 plenum of the CPSU Central Committee, Comrade L. I. Brezhnev noted: "Our country's economic and defensive might has grown substantially. A new and huge step has been taken in developing our national economy and in solving social tasks of major importance. In brief, the current five-year plan occupies a worthy place in the history of the heroic affairs of the Soviet nation, which is going confidently along the road to communism."

Capital construction has an important role here. By the start of 1981 the country's fixed production capital had reached more than 1.1 trillion rubles.

Much was done in 1980, the concluding year of the five-year plan, to execute the vast capital construction program called for by the Tenth Five-Year Plan. Capital investment in the national economy last year was 134 billion rubles, which is 13.7 percent more than was assimilated in 1976--the first year of the five-year plan. According to preliminary data for the year, fixed capital worth a total of 115 billion rubles was introduced into operation, 10.2 billion rubles more than was introduced in 1979.

Many industrial enterprises and a number of large departments and production facilities were put into operation at existing enterprises, including new turbine units at the Zeyskaya GES, capacity for primary oil refining at the Mazheykyay Oil Refinery and for the production of isoprene rubber at Nizhnekamskneftekhim [Nizhnyaya

Kama Oil-Refining and Petrochemical Association[1], huge units of capacity for producing ammonium sulfate and caprolactam at Chirchik's Elektrokhimprom Association and monoammonium phosphate at the Chardzhou plant, and many other production facilities went into operation. Work was done on a broad scale to rebuild and reequip existing production facilities.

No few successes also were achieved in realizing the social programs. In 1980 the Soviet people received a total of 108 million square meters of housing, general education schools for 1.1 million students and preschool institutions for 590,000 children, and the number of hospital beds increased by 68,000 through the construction of new medical institutions and the expansion of existing ones. Last year many cultural and educational facilities, spectator and athletic institutions, including world-known Olympic complexes in Moscow and a number of other cities of our country, were built.

At the same time, in summing up the results of the last five-year plan and the results for 1980, it cannot be denied that serious deficiencies continued to occur in capital construction that exerted a considerable influence on the development of the economy as a whole.

Comrade L. I. Brezhnev gave a deep evaluation of the state of affairs in capital construction in a speech to the ceremonial meeting in Alma-Ata that was dedicated to the 60th anniversary of the Kazakh SSR and the Communist Party of Kazakhstan. Comrade L. I. Brezhnev said: "It is necessary to tighten up capital construction decisively. We build many things. But, unfortunately, resources frequently are dispersed. It happens that the builders do not have enough hands. It is necessary, in matching potential with desires, to concentrate resources to the maximum in the main areas. Let it be the rule: build swiftly, economically and at a modern engineering level. And, speaking more precisely, at the level of tomorrow's requirements. This related to both industry and the countryside."

As a result of the nonfulfillment of plans by the main construction ministries, the low rate of growth of labor productivity in construction, deficiencies in supplying construction projects with supplies and equipment, the instability of capital investment plans, untimely provisioning of construction projects with good quality technical documentation and with complete sets of equipment, and, finally, inadequate purposefulness of work to concentrate available resources and forces at the most important projects, it turned out that five-year plan tasks for introducing capacity into operation were not fulfilled for many of the most important types of output.

This relates primarily to capacity at turbine electric-power stations and capacity for refining oil, mining coal and iron ore, and producing steel and rolled metal, chemical fiber and plastics, various types of equipment, paper and pasteboard, thread, cloth and knitwear products in light industry and a number of food-industry products.

Many enterprises, facilities and structures also did not go into operation in 1980 because of the disruption of plans for construction and installing work, violations of deadlines for delivering equipment, and errors committed in developing design and budget-estimating documentation.

All the work to establish new deadlines for introducing into operation capacity and facilities that were not turned over in 1980, to define for them the amounts of carryover work and the sources for financing them in 1981 and to take steps to speed up the delivery and turnover for installation of equipment that was not supplied must be done as quickly as possible, with a view to erecting and putting these facilities into operation in the shortest time possible. Effective daily monitoring should be established for the responsive solution of all questions that arise during construction.

But all this, although it is very important, is only a small part of the enormous work to establish all the necessary conditions for successful fulfillment of the capital construction program in 1981, which should be performed in the shortest time possible.

As is known, this year extremely short times have been set for delivering to enterprises, organizations and construction projects capital construction plans that have been refined in accordance with the results for 1980: lists of titles of construction projects for production purposes should be delivered to them no later than 15 January, and capital construction plans and lists of titles of all construction projects presented to the banking institutions that are doing the financing prior to 25 January. Taking this into account, this means that on-site lists of construction projects can be developed and coordinated and contract agreements concluded no later than prior to 10 February.

The fulfillment of this important task requires the strenuous coordinated work of client and contractor organizations at all levels of control, from construction projects to ministries.

The development and timely confirmation by contracting organizations, jointly with clients, of integrated schedules for carrying out in 1981 construction and installing work at construction projects for facilities scheduled for startup, and, on coordination with soyuzglavkomplekts [main administrations for supplying complete sets of equipment, fittings, instruments, cable and other articles for especially important construction projects of the coal, petroleum and other branches of industry under USSR Gosplan] and USSR Gossnab regional organizations, of schedules for the shipment of industrial and outfitting equipment and of materials for these construction projects, are of special importance this year, considering the conversion to planning and reporting construction-organization work in terms of construction commodity output. USSR ministries and agencies and Union-republic councils of ministers should confirm measures for providing projects due for startup with a workforce and for executing systematic monitoring over progress in meeting the indicated schedules and in carrying out these measures.

These measures, along with decisive improvement in the organization of production facilities and of work at construction projects and with a rise in the role and responsibility of clients and suppliers of equipment, materials and structure for creating conditions for the systematic and rhythmic work of construction organizations, should enable fulfillment of the large strenuous capital construction program specified for 1981.

Capital investment in the national economy through all financing sources has been set at 140.2 billion rubles for 1981, 124.1 billion rubles of which is state capital investment. These figures are, respectively, 4.5 and 5.2 percent greater than what was assimilated in 1980.

with a view to improving proportionality in developing the economy and to solving most rapidly the tasks of more completely satisfying the requirements of the country's economy and its populace for fuel, metal, equipment, agricultural products, consumer goods and transport haulage, the 1980 plan called for a higher rate of growth of capital investment and of construction and installing work aimed at developing the appropriate branches of the economy.

Thus, while state capital investment in industry as a whole increased over the preceding year by 10.8 percent, capital investment aimed at developing the fuel and power branches grew by 16.6 percent--the gas industry by 21.7 percent, oil recovery by 18 percent and coal mining by 17.3 percent. This year the new system of Punga-Ukhta-Gryazovets, Urengoy-Petrovsk and Gryazovets-Torzhok gas pipelines, totaling about 2,900 km in length and having 18 compressor stations, should go into operation. Introduction into operation of one of the largest coal mines of the Donbass [Donets Coal Basin]--the Dolzhanskaya Kapital'naya, with a capacity for mining 3 million tons of anthracite per year--and continuation of the construction and reconstruction at an accelerated pace of the Neryungri mine in Yakutia and the Nazarovo, Irsha-Borodino, Tyul'gan and Kedrovka strip coal mines and of the largest Raspad coal-preparation facility are called for. Installations for primary oil refining and for the catalytic re-forming of raw material should be put into operation at the Achinsk Oil Refinery.

Ferrous and nonferrous metallurgy should be further developed. A certain reduction in the pace of growth of the production of rolled ferrous metals and of certain types of nonferrous metals that has existed in recent years has been holding back the pace of development of machinebuilding and capital construction. Capital investment in ferrous and nonferrous metallurgy was increased by 6.4 percent in the plan for 1981.

This year substantial growth in capacity for producing steel and cold-rolled metal is to be provided for at the Novolipetsk and Cherepovets metallurgical plants, and large coke batteries at the Magnitogorsk Metallurgical Combine and the Altay By-products Coke Plant, two electric furnaces at the Orsk-Khalilovo and Kuznetsk metallurgical combines, and a high-capacity department for tinned steel sheet at the Karaganda Metallurgical Combine are to be put into operation. At the Vyksa Metallurgical Plant it is planned to introduce a department for multilayer welded pipe, which is badly needed for the construction of large-diameter arterial oil and gas pipelines with pressures of up to 100 atmospheres, the introduction of which should yield great economic benefit and save a large amount of metal. Line No 3 at the Nikolayevka Alumina Plant and additional capacity for mining ore at the Dzhezkazgan Metallurgical Combine are to be put into operation. Work is being completed on the Nadezhda plant of the Noril'sk Mining and Metallurgical Combine, and work will be promoted on construction of the main facilities of the Oskol Electrometallurgical Combine, a "3000" rolling mill at the Zhdanov Plant imeni Il'ich, and the largest blast furnace at the Cherepovets Metallurgical Combine.

Capital investment in the chemical industry will grow by 20.5 percent in 1981 over the amount actually assimilated last year. In so doing, capital investment for building enterprises for producing mineral fertilizer and chemical pesticides will be increased by 32.5 percent. It is planned to put into operation capacity for producing 3.3 million tons of mineral fertilizer, more than 1.1 million tons of sulfuric acid and 390,000 tons of caustic soda. Large capacity for producing polyethylene and ethylene at Orgsintez Association enterprises at Kazan' is to be introduced into operation; this will promote a further increase in the production of plastics, including those that will satisfy more completely the people's demand for articles made from these materials.

Branches of machinebuilding will be further developed. In his speech at the October 1980 CPSU Central Committee Plenum, Comrade L. I. Brezhnev noted: "The combining of science with production and the effect of progressive ideas on it occur in practice through machines and technology. It follows from this that nothing compares with the role of machinebuilding in developing the national economy and in raising labor productivity."

In 1981, 14.8 percent more capital investment is to be devoted to developing branches of machinebuilding than in the preceding year. In so doing, capital investment for the development of power-engineering equipment, primarily for increasing the output of equipment for nuclear power stations, will grow by 16.9 percent, heavy and transport machinebuilding by 14.6 percent, chemical and petroleum machinebuilding by 34.5 percent, tractor and agricultural machinebuilding by 13.9 percent, machinebuilding for animal husbandry and feed production by 22.[illegible] percent, and machinebuilding for light industry, the food industry and household appliances manufacture by 27.1 percent.

In accordance with the decree, "On a Substantial Rise in the Engineering Level and Competitiveness of Metalworking, Foundry and Woodworking Equipment and Tools," that was adopted in 1980 by the CPSU Central Committee and the Council of Ministers, the amounts of construction and installing work for the construction, expansion and rebuilding of enterprises of the machine-toolbuilding and tool industry, which is the heart of all machinebuilding, will almost double over 1980. Substantial funds have been allocated in the plan for the construction of enterprises whose products should provide for the most rapid displacement of heavy manual labor, and also of enterprises for making products for interindustry purposes.

This year the production of trucks should reach design capacity at KamAZ [Kama Motor-Vehicle Plant], and capacity for producing heavy open-pit dump trucks at the Belorussian Motor-Vehicle Plant and mainline electric locomotives at the Novocherkassk Electric-Locomotivebuilding Plant is being increased. Work on the erection of a second line of Atommash and of the Krasnoyarsk Heavy Excavator Plant, a plant for large electrical machinery at Naberezhnyye Chelny, the Kirovograd Diesel-Engine Plant for Rail Transport and many other large machinebuilding enterprises that are under construction is to go on at a rapid pace.

Proceeding from the decisions of the July 1978 CPSU Central Committee Plenum, much capital investment is being devoted this year to developing agriculture. On the whole, 37.3 billion rubles, from all financing sources, is to be invested in developing this branch, which is 26.6 percent of all capital investment in the national economy. In so doing, capital investment directed toward nonproductive construction, primarily for the construction of housing, will grow at a rapid pace; this will help to solve most rapidly the problem of retaining personnel at sovkhozes and kolkhozes.

With a view to further strengthening in every possible way the supply and equipment base for agriculture, capital investment in the construction of facilities for production purposes at state agricultural enterprises and in the development of industries that are directly connected with agriculture (the mineral-fertilizer and pesticide industries, tractor and farm machinery manufacturing, and machinebuilding for animal husbandry, feed production, the milling and groats industry and the mixed-feed and microbiological industries) has been set in the 1981 plan in the amount of 25.5 billion rubles, which is about a fourth of all state capital investment in production-type construction. This year complexes for raising and fattening 468,000 hogs and 38,000 head of cattle and poultry factories for raising 87.6 million meat-type fowl per year are to be put into operation, 700,000 hectares of land are to be irrigated, 770,000 hectares are to be drained, and 5.6 million hectares of pasture are to be flooded, through state capital investment. Grain-elevator capacity for one-time storage is to be increased by 3 million tons, and the capacity of enterprises for producing mixed feed is to be increased by 11,000 tons per day.

The great importance that was attributed at the October 1980 CPSU Central Committee Plenum to questions of developing the production of consumer goods is well known. Industries that directly support the output of these commodities will receive further accelerated development in this year's capital construction plan.

Thus, capital investment in light industry will increase 19.9 percent. An additional 380,000 spinning spindles and 7,200 looms (2.5 times as many as in 1980) will be installed at textile industry enterprises. Capacity for producing outer knitwear and linen will be greatly increased. Factories for nonwoven materials in Borislav, UkSSR, and in Pap, UzSSR, cotton-spinning mills in Dolina, UkSSR, and Dzhizak, UzSSR, large knitwear mills in Berdyansk, Nakhichevan', Tskhinvali and Rubezhnoye and many other facilities are to be put into operation.

The forces of many collectives of construction organizations and of client organizations of USSR Minlegprom [Ministry of Light Industry], USSR Minpishcheprom [Ministry of Food Industry] and USSR Minmyasomolprom [Ministry of Meat and Dairy Industry] should be directed this year toward speeding up the construction and the most rapid buildup in engineering preparation of the enterprises and facilities of these branches that are to be introduced into operation in later years of the 11th Five-Year Plan. Work on the technical reequipping and rebuilding of existing enterprises of the indicated ministries should be performed at a more rapid pace this year. The 1981 plan for light industry sets aside more than 50 percent of total capital investment in construction for these purposes, and, in the food, meat and milk industry the figure is more than 40 percent.

In accordance with party and government decisions on the accelerated development of rail transport, capital investment in this important branch of the national economy is being increased by 7.8 percent in 1981. For the construction of the Baykal-Amur Mainline complex, a program of construction and installing work amounting to 650 million rubles (16 percent more than in the preceding year) is to be carried out, and the first section of the western portion of this line, from Ust'-Kut to Kunerma, 261 km long, is to be put into operation. On rail routes heavily loaded with freight 820 km of second track are to be turned over for operation, and 1,000 km of railroad are to be electrified.

Cargo-handling capacity is to be increased by 1.9 million tons at the Arkhangel'sk, Leningrad, Il'ichevsk and some other maritime parts by the construction of new frontage and the technical reequipping of loading and unloading fronts.

This year 13,200 km of hard-topped highways are to be put into use. Construction of the Moscow-Khar'kov-Simferopol', Moscow-Minsk-Brest and Sverdlovsk-Chelyabinsk highways, which is being performed with highly productive Avtogreyd type machines, is to continue. Capital investment for the construction of local roads, primarily in the Nonchernozem Zone of the RSFSR, where 3,655 km of such roads are to be put into operation, will be greatly increased.

Much is to be done in the area of fulfilling the social program. This relates primarily to housing construction. For these purposes the 1981 plan calls for capital investment in the amount of 18.7 billion rubles, which is 5.4 percent more than was approved in the 1980 plan. This will enable 108.9 million square meters of gross housing space to be built and put into operation this year, 79.2 million square meters of it through state funds, which is somewhat higher than housing introductions expected for 1980. Capital investment in housing construction in the countryside will grow by more than 9 percent over 1980.

In the coming year general education schools for 1.04 million students, preschool institutions for 628,000 children and hospitals with 57,400 beds are to be put into operation. Much work is to be done to further develop municipal services and to build facilities connected with preserving the environment and eliminating the pollution of rivers and bodies of water.

The plan calls for improvement of the structure of capital investment and a rise in its effectiveness. Thus, the share of expenditures for equipment in the total of state capital investment will be 39 percent in 1981 versus 38 percent under the 1980 plan, while the share of construction and installing work will be reduced from 51 percent to 50 percent. Capital investment allocated to existing enterprises for technical reequipping, rebuilding and expansion and the share thereof in the total amount are being increased somewhat. For these purposes 45.4 billion rubles, or 64 percent of capital investment for construction projects, is to be spent for these purposes, of which 20.4 billion rubles (28.9 percent) is for technical reequipping and reconstruction.

However, it should be noted that the improvement and updating of existing fixed productive capital still is not receiving the attention due it. Many ministries do not carry out tasks for increasing production capacity at existing enterprises, and they strive to solve questions of developing industries and production facilities primarily through new construction. Meanwhile, experience indicates that this area of expanded reproduction of fixed capital will enable the effectiveness not only of capital investment but also of all social production to be raised.

The experience of Orel's Prompribor production association is typical in this regard. As a result of the integrated and systematic execution of work to rebuild and reequip various departments and production facilities, taking into account the tasks that face the association, it was possible during the five-year plan to increase output by 52 percent over the preceding five-year plan, output realization by 54 percent, and labor productivity by 43 percent. The effectiveness of the resources invested in rebuilding turned out to be much higher than for resources invested in creating the corresponding capacity by means of new construction.

Ministries must, in the shortest time possible, do work to prepare plans for the technical reequipping and rebuilding of existing enterprises during 1981-1985 and to examine possibilities for the additional allocation of capital investment for these purposes in 1981. In brief, the task of improving and updating existing fixed productive capital should truly become a most important state task. The interests of raising the effectiveness of the country's economy and of solving tasks of intensifying all social production urgently requires this.

With a view to concentrating capital investment and construction-organization capacity at projects scheduled for startup and to reducing the amount of uncompleted construction, the plan for 1981 sharply restricted the number of new construction starts of production facilities that have a budget-estimated cost of 3 million rubles or more.

USSR ministries and agencies and Union-republic councils of ministers should take decisive steps to reduce uncompleted construction with a view to bringing it down to the established norms in the next few years. For this purpose, it is necessary right now, when work is being done to refine plans and title lists of construction projects for 1981, to restrict as much as possible the number of new construction starts for production facilities and of the title lists that are confirmed by them and to allocate capital investment to previously started construction projects in accordance with construction-time norms.

USSR Stroybank and USSR Gosbank have been granted the right to accept for financing construction projects newly started in 1981 that have a budget-estimated cost of less than 3 million rubles only in exceptional cases and provided that startup-type and carryover construction projects with this same ceiling of the corresponding branches of the economy are provided completely with capital investment.

In a speech to the October 1980 CPSU Central Committee Plenum, Comrade L. I. Brezhnev pointed out that the plan's tasks must be supported by precise organizational activity, high discipline and rigid monitoring. The main thing right now is to assign to construction projects more quickly tasks for introducing capacity, fixed capital and construction commodity output that have been refined to take the work results of the past year into account, to eliminate responsively difficulties and breakdowns that occur during construction, and to establish daily monitoring of and high exactingness at all levels of supervision of construction for the state of affairs at construction projects and for deliveries of industrial equipment, materials and constructional structure.

The year 1981 is the first year of the conversion of construction work to the new methods of planning and management that were defined by the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979. Last year much preparatory work associated with introducing the basically new principles of this decree into practice was done. It is necessary to complete this work in the shortest possible time.

Despite the fact that the major portion of these principles presuppose the integrated introduction thereof under the terms of the five-year plan, much can and must be done this year. This relates primarily to questions of evaluating the activity of contracting construction and installing organization in accordance with the results of fulfillment of the plan for construction commodity output and of organizing the appropriate computation for this indicator, of converting widely to settlements for jobs as a whole, and of expanding the practice of providing construction projects with materials and equipment in accordance with their requirements, as defined by the designs, through regional USSR Gossnab organs, and of making deliveries of completely outfitted industrial equipment by leading plants.

The successful implementation of these and a large number of other important principles of the indicated party and government decree in carrying out the 1981 plan will undoubtedly help to improve our country's capital investment.

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CONSTRUCTION

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HIGH TRANSPORT COSTS DISTORT CONSTRUCTION WORK INDICATORS IN FAR NORTH

Moscow EKONOMIKA STROITEL'STVA in Russian No 1, 1981 pp 62-64

[Article by Engineer I. G. Tsirunyan: "The Transportation Factor in Budget-Estimated Prices for Materials in Far North Regions"]

[Text] By way of discussion.

Improvement of the economic mechanism in construction is inextricably connected with the improvement of design and budget-estimating matters. A prerequisite to determining amounts of capital investment and to evaluating investment effectiveness correctly is an increase in the validity of budget-estimated costs of construction, on the basis of regularizing the design of buildings and structures and of drastically improving the system of budget-estimated norms and prices that make up the standards base for setting prices in construction.

The modern stage of economic development is marked by an increase in the pace and scale of development of Far North regions and of localities equated to them and by the introduction of unique natural resources into the country's economic circulation. These regions are distinguished by specific economico-geographical, natural and climatic conditions for doing construction work that give rise to high budget-estimated construction costs.

An important means for reducing budget-estimated construction costs is improvement of the existing system for setting norms for budget estimates for construction. The solution of this problem has acquired special urgency because of the planned conversion during the 11th Five-Year Plan to new budget-estimating norms and new prices for determining budget-estimated construction costs and for planning capital investment.

The currently existing system of Unified Regional Unitary Pricing (YeRYeR-69) and of average regional budget-estimated prices embraces the country's entire territory except for Far North regions and localities equated thereto, where independent budget-estimating standards and in some cases departmental standards are applied. In this case methods for specifying budget-estimate prices and for establishing zones therefor and the procedure for application are differentiated essentially in accordance with individual areas of the region, often reflecting not concrete construction conditions but peculiarities of the approach to methods for establishing budget-estimate prices on the part of design organization workers. Differences in methods for defining budget-estimated prices for both local and imported materials impede the planned management of price-setting in construction and the discovery and use of construction-work reserves, as well as the solution of tasks for raising capital-investment effectiveness.

As indicated by research carried out by MISI [Moscow Construction-Engineering Institute] imeni V. V. Kuybyshev, jointly with USSR Gosstroy's NIIES [Scientific-Research Institute for Construction Economics], the procedure for figuring transport costs in budget estimates for construction work, the share of which in budget estimated prices for materials is 50 percent or more (versus 15-20 percent in the central regions), exerts a considerable influence on the formulation of the regional level of budget-estimate costs. In regions where construction now involves several branches of the economy and is accomplished by USSR Minenergo [Ministry of Power and Electrification], Mintransstroy [Ministry of Transport Construction], Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] and certain other ministries, the share of transport costs in budget-estimate prices for materials reaches 70-80 percent.

Transport costs for Far North regions differ considerably by separate portions of a region, because of which, under existing methods for determining budget-estimated costs of operations, contracting organizations have been placed in economic circumstances which affect their activity that are known to be unequal. In doing construction work in a rayon (or kray or autonomous republic) and in doing one and the same amount of work, expressed in kind, contracting organizations have different plan indicators and obtain dissimilar amounts of funds for overhead costs, planned accumulations and expenditure ceilings only because the distances for delivering materials differ, even though these costs and expenditures are not, as a rule, functions of the transport factor.

Thus, contracting organizations that operate in Olenekskiy Rayon of the Yakutskaya ASSR get 2.8-fold more funds for overhead expenditures, planned accumulations, temporary buildings and structures and added allowances for winter work (under identical norms) than when doing construction work in the republic's Amginskiy Rayon.

Substantial differences in transport expenditures, where their relative levels are high, often lead to a deformation of budget-estimated construction costs, distorting the indicators for comparative economic effectiveness of capital investment. Under these circumstances a high level of profitability in trusts, SMU's [construction and installing administrations] and PMK's [mobile mechanized columns] do not necessarily indicate the effectiveness of their work.

Computations carried out in the case of the Yakutskaya ASSR indicate that organizations that do construction and installing work in remote areas of the republic that are difficult of access, for which dispersed construction and small amounts of work over substantial areas are characteristic, profitability indicators take shape on a level that greatly surpasses the profitability level of organizations that do construction work in the central part of the republic. The abnormality of such a situation is all the more obvious in the fact that organizations that operate in the central regions do much more work, construction industry enterprises are concentrated there, and contracting organizations are much better equipped there. The differences in profitability indicators, as analysis has indicated, are caused to a great extent by the share of transport costs in the budget-estimated prices for materials.

Research results permit a basically new method for figuring transport expenditures in construction commodity output volume to be recommended, in order, on the one hand, to allow actual conditions and distances for delivering materials to be reflected in the budget estimates, and, on the other, to preclude the possibility of unjustifiably overstating the budget-estimated cost of construction which results from the procedure used for computing it.

The improvement of methods for working out budget-estimated prices for materials in Far North regions should be based upon the need for budget-estimate prices to reflect expenditures on the work spent in manufacturing the materials and in shipping them to the customer that are socially necessary. The magnitude of these expenditures in the region being examined is established, as a rule, at the oblast level.

At the same time, in such areas as the Yakutskaya ASSR, Magadanskaya Oblast and Krasnoyarskiy Kray, which are distinguished by vast territory and great differences in conditions for transporting materials in the various parts of the oblast (or kray or republic), the socially necessary expenditures for the work are formulated at the level of groups of zones. Thus, in the Yakutskaya ASSR the first group of the zones includes 11 administrative rayons (Alekseyevskiy, Amginskiy, Gornyy, Lenskiy and others) and the city of Yakutsk and suburbs, the second group of zones includes 8 administrative rayons, and so on. The forming of groups of zones should be based upon the results of an analysis which describes the peculiarities of forming spheres for marketing construction materials.

Because of this, it is desirable, in our opinion, to use single-level oblast budget-estimated prices in Far North rayons. Such a price incorporates the wholesale price for the materials and the average amount of transport costs, which is defined as the weighted average thereof, computed by rayon. Single-level oblast budget-estimated prices should be used for determining the budget-estimated construction costs in all rayons (or zones) of the oblast. Since transport cost levels differ by rayon of an oblast, it is necessary in this case to use "regional" correction factors (pluses and minuses) that reflect the intraoblast differential of expenditures. They should not be included in construction and installing work volume, and ceilinged expenditures should not be reckoned on the basis of them.

Such an approach to the development of budget-estimated prices for materials will help to regularize the system for setting budget-estimating norms and for setting prices in Far North regions, and, on that basis, will help in balancing out in economically substantiated fashion the conditions for managing contracting operations, in making a more objective evaluation of their operating effectiveness, and in enabling the comparability of the budget-estimated cost during design and the execution of construction in various rayons of the oblast, kray or autonomous republic.

Improvement of the existing procedure for reflecting current changes in wholesale prices and in the conditions of and distances for shipping materials, and so on, in budget-estimated construction costs, is an important problem.

Budget-estimate standards are at present in effect for 14-15 years. Such a prolonged period in the use of unchanged prices leads to their gradually being separated from their base, that is, from the level of expenditures that made up their base. We feel this gap especially in Far North regions, for which considerable change in the level of expenditures over short time periods is typical. Under the existing procedure for developing and using budget-estimated prices, the reduction of outlays for producing materials and for delivering them to customers is not reflected in budget estimates but is counted in contracting organization profit plans. The high level of budget-estimated construction costs that prevailed during the base period is maintained artificially. Solution of the indicated problem is not simple, since the use of stable budget-estimated prices is an important prerequisite to the planning and management of construction, based upon the comparability of cost indicators for different periods.

In order to compute changes in levels of expenditures for producing materials and for shipping them to customers, it is recommended that "temporary" correction factors be used. They determine the amount of the change in budget-estimated costs of construction and installing operations and in expenditures occasioned by changes that are occurring in development of the region's production and social infrastructure and of the terms for cooperation in the delivery of output.

Single-level budget-estimated prices and temporary correction factors can be compared with graduated prices in industry. It is recommended that the length of the step be adopted as 5 years, and that temporary correction factors be developed that are uniform for the oblast (or group of zones). Expenditures called for by temporary correction factors should not be included in construction and installing work volume, and expenditure ceilings should not be reckoned on the basis of them.

Experimental computations have enabled the level of reduction of the budget-estimated cost of construction to be determined by computing the reduction of transport expenditures for materials within the framework of the period of effectiveness of the 1969 budget-estimating standards. Thus, by reducing annual estimated expenditures for transporting construction freight in the South Sakhalin, Poronay and Uglegorsk zones of Sakhalinskaya Oblast, the budget-estimated cost of construction and installing operations should be reduced by 0.8 percent, and in the Tymovskoye zone by 3.6 percent.

An especially substantial reduction in budget-estimated construction costs is expected in areas of intensive development, primarily in areas adjacent to the BAM [Baykal-Amur Mainline] zone. Thus, because of the introduction of the Tynda-Berkakit railroad route and the reduction, as a result of this, of motor-vehicle haulage by 400 km, the budget-estimated cost of construction and installing work for the Aldanskiy Rayon of the Yakutskaya ASSR should be reduced by at least 3.7 percent.

In considering trends in development of the production and social infrastructures in Far North regions, unification of the various types of budget-estimated prices and conversion to single-level budget-estimated prices will enable, in our opinion, the actual conditions for executing construction work to be reflected in budget estimates and the validity of determining construction commodity output volume to be raised, and they will help to reduce the budget-estimated cost of construction and to raise capital investment effectiveness.

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CONSTRUCTION

REDUCING THE COST OF BUILDING HOUSING UNITS

Moscow STROITEL'NAYA GAZETA in Russian 21 Dec 80 p 2

[Article by A. Krippa, chairman of the section of housing of the Moscow organization of the USSR Union of Architects: "If the Norms are Outdated"]

> [Text] The author proposes: bringing existing sanitation and hygiene and fire fighting standards into alignment with the requirements of modern civil housing construction thereby reducing the cost of buildings by 6 to 8 percent and decreasing their heat losses by 10 to 15 percent;
>
> adopting efficient materials for use in civil housing construction, having made provision in the Eleventh Five-Year Plan to significantly increase the production of such materials.

The switch to building buildings according to new standard plans has made it possible to sharply improve the architectural and artistic qualities of the building process and to create maximum conveniences for the new facilities. But for fully understood reasons all of this has led to an increase in cost of construction: the cost of one square meter of living space has increased by 7 to 9 percent.

It is true that in the Tenth Five-Year Plan based on recommendations of scientists and a review of the norms for designing construction work we managed to reduce the estimated cost of building housing by 1.8 to 2 percent and to reduce the use of steel by 10 percent and the use of cement by 5 percent. But the reserves for improving the operational, insulating and technical-economic indicators of housing units are far from exhausted. The position of the CPSU Central Committee draft plan about the need to reduce the cost of constructing housing units is very realistic. The question is how to accomplish this. In my opinion certain outdated norms now in effect in the house building sector prevent putting these reserves into use.

I will try to justify my assertion. We know, for example, that increasing the width of a housing unit by one meter reduces the cost of one square meter of living space by a percent, decreases the expenditure of construction materials by 1.5 to 2 percent and heat losses by

4 to 6 percent. Therefore even during the prewar period buildings of nine stories and higher were erected as a minimum with 6 or 8 apartments with a stairwell and a building width of not less than 14 to 15 meters. Even now throughout the world this is the way that they build nearly half of all apartment buildings. In the Soviet Union alone modern apartment buildings are designed with a stairway or elevator unit for a maximum of 3 or 4 apartments, which restricts the width of the building to 10 or 12 meters.

Why do we not use a broad design-layout system? Because the initiative of the designers is blocked by binding norms - sanitatary and hygiene and fire fighting norms. They require, for example, that buildings receive three hours of sunshine every day. But no one can intelligently explain why precisely this amount of sunshine was established as the minimum or how much time is really required to destroy disease-causing bacteria: serious research on this matter has not been conducted. The reference to the fact that the Soviet Union was the first to come up with this indicator is, to put it tactfully, not very convincing.

The requirement to put the stairwell and elevator unit in the center of the living section so that there can be natural lighting is also very doubtful. After all the functional importance of a stairwell when there is an elevator is minimal. The requirement of the fire fighting administration that in the event of combustion it is necessary to provide an outlet for smoke is not difficult to satisfy: windows can easily be replaced by special hatches in the building's roof. Then the positioning of the stairwell and elevator unit in the center of living section would make it possible to put a heavy load on the building and to increase the building's width by 2 to 3 meters. On the whole this would reduce the cost of construction by 6 to 8 percent. Heat losses would be decreased by 10 to 15 percent.

In designing apartment buildings, the architects, according to a requirement of fire and light stairwells in 5- to 9-story buildings, must make provision for fire transits and vertical metal stairs for emergency communication between apartments; and in apartment building higher than 9 stories there must also be smoke-free accesses. Building stairs increases the use of metal to a kilogram per square meter of space. And here is a dubious effect: the tenants, as a rule, block up all openings and make communication between apartments impossible, both vertically and horizontally. And here is something else that is surprising: the fire authorities, who are inflexible with the architects, disregard the actions of the tenants.

Also of dubious worth is the requirement that all stairwells be smoketight. Because there is no need to heat the stairwells, it is necessary to install doors on each story, and they increase heat losses to 6 percent. In addition, in order to prevent smoke from reaching adjacent floors through the elevator shafts, it is necessary on each stairway and elevator junction to install a powerful installation to create a head of air in the event of fire. They cost quite a bit, but if there is a sudden need for them, it occasionally turns out that they are inoperable because no one inspects them.

To increase the effectiveness of fire fighting measures, it is thought, it is wiser to equip apartments with gauges that react to smoke or an increase in temperature. Alarms from such detectors can be transmitted to a special dispatch panel in the housing office and the nearest fire station. One can also provide a head of air in special gate-locks in each apartment. By the way, a second entrance installed in the lock will improve sound insulation. The money spent on all of these things will be more than compensated because there will be a reduced need for fire doors from one apartment into another, bulky stationary installations which provide a head of air and for smoke-tight stairwells.

In many cities there are still not enough institutions for children. This shortage can be quickly reduced if they are built of standard articles that are manufactured by the housing construction combines. But the ministries of education and health have opposed this because the height of the rooms will be 265 centimeters instead of the required 300 centimeters. But, one asks, what importance for the development of a child is the slight decrease in the height of a room, when it spends 16 out of 24 hours in an apartment with a standard height? In addition the architects propose solutions which make it possible to strengthen the exchange of air or to increase the area of the rooms so that the cubature remains in the normal range. The speeding up of the rates for building institutions for children will avoid the forced increase in personnel of groups, which, without doubt, will create conditions that are more favorable to children.

All that has been said is far from new for specialists. Many of these questions have been raised by the Central Scientific Research Institute of Economic Planning of Housing for review by the State Committee for Civil Construction and Architecture. The housing section of the Moscow organization of the USSR Union of Architects has repeatedly assembled architects, representatives of the Ministry of Health and the main administration of the USSR Ministry of Internal Affairs' fire fighting arm to a "round table", but so far we have been unable to reach any conclusive agreements. Our opponents - doctors and firemen-simply avoid any constructive solution of the problem.

Of course, there is no need to prove the importance of sanitation and hygiene and fire protection norms. But they have not been reviewed for many years. At the same time the quality of housing construction has changed radically. Reinforced concrete has replaced the brick walls and wooden ceilings and partitions in the apartment buildings. Instead of rooms in a communal apartments, each family now has an individual apartment, which sharply changes the sanitation and hygiene living conditions. However, no matter how paradoxical, it is now that these norms have become more rigid.

Is it not time for the specialists, upon whom depends the further development of housing construction, and the State Committee for Civil Construction and Architecture to align these norm-setting sections with the changes that have transpired in the building of housing?

Enormous reserves are opening up in the use of effective construction materials. For example, the use of modern insulation made of various kinds of foam plastic in the panels of exterior walls will make it possible to reduce their thickness and weight and to reduce heat losses nearly 2-fold.

In Moscow and other cities as early as 1960-1963 experimental housing units were built with a thickness of the wall panel of 10 to 15 centimeters, where polystyrene foam was used as insulation and on the exterior side aluminum or asbestos-cement sheeting and fiber glass were used. These materials fully justified themselves in use. In addition these panels are nearly ten times lighter than similar reinforced concrete and rock wool insulation. Consequently, it requires approximately ten times less fuel to transport them and considerably fewer transportation outlays. But for now these progressive structures have not been put into use in mass construction.

The realization of just these proposals will make it possible to obtain in the Eleventh Five-Year Plan a significant savings in assets being invested in civil housing construction and will increase its effectiveness and quality. For this reason the fifth paragraph in the VII section of the CPSU Central Committee draft of the Basic Directions I propose should contain the phrase: "Review outdated sanitation and hygiene norms, which are restraining the effectiveness of civil housing construction and increasing the production of progressive construction designs for housing construction."

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CONSTRUCTION

TOKAREV DISCUSSES COST ACCOUNTING IN INDUSTRIAL CONSTRUCTION

Moscow STROITEL'NAYA GAZETA in Russian 28 Jan 81 p 1

[Article by A. Tokarev, USSR Minister of Industrial Construction: "A Reliable Support"]

[Text] Brigade cost accounting has become one of the reliable links of the economic mechanism in construction. In the Tenth Five-Year Plan subelements of the USSR Ministry of Industrial Construction have used the brigade contract method to build 35,000 projects, the majority of which were completed ahead of schedule. The real savings from reducing the estimated cost of construction was 150 million rubles.

In creating the cost accounting multiple production flow lines the ministry has now taken this path. This is the most efficient system for organizing production in large-panel construction of housing. For example, in the large-panel construction trust of Glavsochispetsstroy [the Sochi main administration of special construction] on the flow line was obtained during the five-year plan nearly 140,000 rubles in savings from reducing the estimated cost of construction. The rates of average monthly assembly of series "1-467" housing units increased by 2.5 stories. The monthly rate of assembling series "1-335-AS" housing units in the main administration with the adoption of the contract method increased from 135 apartments to 200.

The experience of the Vinnitsa industrial construction combine in planning, estimating and assembling on an enlarged cost accounting brigade, which was approved by the CPSU Central Committee, is being creatively developed by the DSK [house building combine) collective of the Kherson industrial construction trust. One of the DSK flow lines, the work of which is headed by brigade leader V. Fedorenko, based on the conveyor transport of cargo and installation "from wheels", achieved an installation rate of one story of unit-sections per day. The per-member output has increased to 72,000 rubles. This is the kind of contract effect that we must aim for.

In accordance with the statutes of the CPSU Central Committee draft for the 26th Party Congress the collegium of the USSR Ministry of Industrial Construction and the Central Committee of the sector trade union have decided to transfer this year all DSK and KPD [large-panel house building] trusts to the technical cost accounting flow line "plant -

transport - construction project". To accomplish this the necessary standardized documents have already been developed and put into operation. While improving the organization of the brigade cost accounting, we recall the significance that was attached to the automated control systems. The ministry intends to disseminate the experience of Glavvostoksibstroy [Main Administration of Construction in Eastern Siberia] for the comprehensive engineering preparation of production using computers, which makes it possible to reduce the time periods for preparing planning documentation for the brigades from a month to five days.

The use of ASU-DSK [automatic control system of the house building combine] makes it possible to reduce losses of work time in the assembly brigades, to reduce the amount of reinforced concrete in the warehouse for finished product and in the on-site warehouses, to increase the level of completeness of the production of reinforced concrete articles, and to ensure the smoothness in the work of the assembly flow line. The annual economic savings from using this system in the Sevosetinpromstroy [Northern Osetinskaya ASSR Industrial Construction] Trust was 118,800 rubles.

New frontiers in adopting the brigade method are planned by the USSR Ministry of Industrial Construction for the current five-year plan. In 1985 we expect to use this method to accomplish 60 percent of all construction and installation work. The cost accounting collectives must provide us with an increase in labor productivity of 4.3 percent and provide an economic savings of 196 million rubles in the estimated cost. Another 816 brigades of the enterprises of the construction industry, 732 motor transport, 120 installation and transport and 255 earthmoving and transport brigades will switch to the contract method.

On the agenda of a forthcoming meeting on the brigade contract I would like to propose including ways to further improve the organizational structure of the lower-level cost accounting. In view of the experience of the Vinnitsa industrial construction combine, the USSR Gosstroy and other directing organs must permit the adoption at the construction projects of the position of foreman-brigade leader. . is advisable to define the rights of the brigades for counter sanctions upon the administration for nonfulfillment of contract conditions. The time has come to be concerned about the preparation of documentation for the subcontract brigades (determining the stages and groupings of work, their estimated cost, expenditure calculations and salary) at the planning stage. It is necessary to establish a system of interrelations and a unified material incentive of all participants of multiple skill technological flow line in housing construction and the comprehensive contract in industrial construction.

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PROGRESS OF CONSTRUCTION OF NEW NORIL'SK METALLURGICAL PLANT

Moscow STROITEL'NAYA GAZETA in Russian 20 Feb 81 p 1

/Article by Ye. Latyshev and I. Popov of the ZAPOLYARNAYA PRAVDA newspaper, Noril'sk: "The Metal of Hope"/

> /Text/ Fifteen kilometers from Noril'sk the construction of the Nadezhda metallurgical plant is coming to a successful completion. This is one of the most important Soviet national economic construction projects. At midnight on 15 February the first batch of metal was received; this was earlier than the socialist pledges that were made in honor of the 26th party congress.

Speaking in regard to this event, the chief of the Taymyrenergostroy organization, honored builder of the republic, A. Zakopyrin, told that within a four year period in one foundry shop alone nearly one half million cubic meters of earth and rock excavation work was performed (and this in permafrost conditions) and more than 100,000 cubic meters of monolithic reinforced concrete was poured (at times in 50-degree below freezing temperatures and polar darkness). Nearly 50,000 tons of metal structures and more than 140 kilometers of internal pipelines were installed. What is more all of the work of the builders and installers was accepted with a rating of "good" and "excellent".

Those who are building the plant and working in it are called the Nadezhdanites in Noril'sk. This is a title of respect, worn with pride by the brigades of Taymyrenergostroy that are led by A. Garmatyuk, V. Bakanov, V. Korchenov, G. Kozachenko, and the collectives of assemblers led by I. Gavrikov, V. Nigmatulin, V. Demidenko and I. Levinson.

The first nickel from Nadezhda is an important though temporary stage in the construction of the new nonferrous metallurgical giant. Next in line is the completion at the end of February with comprehensive testing of the production line for copper and the completion of the entire second section of the plant. Due to this the Noril'sk mining and metallurgical combine will increase its capacity by 1.5-fold.

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NEW CAPITAL CONSTRUCTION FORMATION DESCRIBED

Moscow STROITEL'NAYA GAZETA in Russian 27 Feb 81 p 3

/Article by A. Yashakin, chief of the Order of Lenin Leningrad Production Construction and Installation Association: "The Possibilities of the Maneuver"/

/Text/ Within the structure of capital construction management there have appeared new formations - the production construction and installation associations - the PSMO. These formations concentrate the resources of the administrations and trusts that comprise them. The basic task of the associations is to provide a flexibile and operational maneuvering of centralized resources, to switch the attention of subcontractors from gross product indicators to a commodity construction product, and, finally, to speeding up the completion of construction projects.

The first such association was created just over a year ago within the Glavzapstroy trust in Leningrad; it was formerly called Trust No 36. The association is made up of eight general construction administrations and one PMK /mobile mechanized column/. In addition there is a mechanization administration, a construction materials combine and an UPTK /production-equipment assembly administration/. The construction and installation administration and other subelements have lost the functions of enterprises as corporate bodies; they are now the prerogative of the association. The amount of work that is performed has increased substantially, amounting to nearly 60 million rubles per year.

Are there any advantages in the new management structure? Yes, there are.

At the beginning of last year while reorganizing our former trust, we created a unified mechanization administration, which was in charge of all excavators, bulldozers and cranes. Favorable results were evident immediately: there was an increase in per unit capacities of machinery and in profitability and safe keeping. But most important was the fact that we had the possibility to maneuver equipment on an operational basis.

for the construction of a cardboard factory in Antropshina, our association's most important project this year, we are able to simultaneously send as many as ten average-sized excavators and as many one-hundred-horsepower bulldozers. None of the subconstractors have to wait when urgently in need of a ditch for a small foundation or a trench for a short cable. The construction project proceeds quickly and harmoniously, ahead of schedule. One can be certain that during the start-up period there will be no unfinished work to take care of.

The association has its own lumber exchange; it performs and delivers a variety of millwork to the construction projects. The unified construction materials combine manufactures preassembled metal structures and reinforced concrete articles - even in non-standard sizes. For example, for the construction of a support fittings plant there was a need for 300 cubic meters of individually sized pylons - they were manufactured immediately. Of course, for each kind of non-standard manufactured article it is necessary to rerig the plant's production line. But the cost of the rerigging is recovered by speeding up the construction.

The production and equipment assembly administration watches carefully to ensure that resources are not dispersed, but are concentrated on the most important projects. The administration's subelements will be significantly strengthened.

We are planning to create a base for finishers, who are gradually being brought into the association. The problem is to see to it that the finishers and sanitary engineers have the same level of mechanization of work and working conditions as the specialized trusts. Without this we are unable to avoid a large turnover of personnel, which can be the consequence of a formal restructuring.

The association is gradually assuming cost accounting functions, which previously were held only by the construction administrations. We have a completely centralized estimate and contract relations; soon we will have a unified bookkeeping system. The thought behind these transformations is to switch from the system of contracts with "outside" subcontractors to the internal subcontract, which will be controlled by the association management.

The subelements of Glavzapstroy have for several years kept their accounts according to commodity construction product. This experience has helped to move forward and to switch to long-term financing according to the full estimated cost of the construction projects considering the installation of equipment. Such a system of financing disciplines the contractor, forcing him to seek internal reserves and to immediately put them to work. This is because the bank takes significantly less interest when the project is put into operation on time or ahead of schedule.

In this way the managers and the entire collective of builders develop a taste for socialist enterprise and the knowledge of how to achieve the best results with the least outlays. There is no doubt that an association working in a "closed" cycle on an internal contract, which has all necessary resources, is able to respond to the entire complex of production and to hand over projects "under the key".

One such construction project this year will be our plant for the production of pipeline cut-off fittings. A supply-line schedule has been drawn up, in accordance with which the first product at the plant must be obtained two months earlier than the standard time period. What benefit do the builders receive from this? First of all they will pay off the bank loan ahead of schedule. At the same time we will receive the right to share in the profits received by the plant for putting capacities into operation ahead of schedule. And here is another attractive aspect of the association's economic structure.

The creation of a unified Party organization, comprised of communists from all of the PSMO's subelements, has been very important for the association. Without this it is difficult to maintain effective control over production, to raise the role of socialist competition, and to adopt leading experience. All of these matters were reflected in the draft plan for the economic and social development of the association's colletive for the Eleventh Five-Year Plan.

The section of the plan that calls for the construction of housing has been substantially expanded. There are plans to build 700-to 750-unit apartment buildings on Prospekt Marksa in Leningrad and a hotel-like dormitory in Krasnoye Selo. The association's collective will be strengthened and the duty of the administration and public organizations is to assist this process.

Such are the advantages of our economic experience for the time that we have existed. There is a basis behind all of this: let no one think that the creation of the association is like a new pretext on an old facade. In the very term "association" is distinguished the structural newness, which, however, can be seen in the presence of such catalysts of the modernization process as business mindedness, persistence and talent.

Of course, our future is not entirely clear. The main administration is planning for the association a 15 percent growth in construction and installation work as compared with last year. This is a very complicated task, since we have 15 key construction projects this year and the industrial base has not yet been completed. Old traditions of planning alarm us. I have no doubt that an association such as ours will demonstrate the initiative to sharply increase its production program - its situation as a cost accounting organization is prompting this. It is only necessary to give the new formation the opportunity to grow strong.

At present our construction and installation association has begun to adopt the multiple skill brigade contract. The first such contract has been drawn up for the construction of a laboratory building of a turbine blade plant. We intend to organize the construction of this facility in a manner befitting a collective that has been awarded the Order of Lenin.

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COMPREHENSIVE CONSTRUCTION PROGRAM IN BELORUSSIA

Labor Productivity

Moscow STROITEL'NAYA GAZETA in Russian 18 Feb 81 p 1

[Article by Yu. Kolokolov, secretary of the Central Committee of the Belorussian Communist Party: "According to a Comprehensive Program"]

> [Text] Under the leadership of the Party organizations, the builders of the Belorussian SSR have developed and are successfully accomplishing a comprehensive program for raising labor productivity.

The builders of the Belorussian SSR are greeting the 26th Party Congress with a broad range of socialist competition. The Party and trade union organizations and the labor collectives of the sector are directing all their efforts toward successfully fulfilling the pre-congress pledges and assignments of the first year of the new five-year plan. Special attention is being given to the more complete use of the reserves of intensification of production, particularly in raising labor productivity.

In present-day conditions in the economy of construction certain new tendencies have appeared. During the last two decades the growth in labor productivity has been largely achieved at the expense of outfitting the construction organizations with earth moving, freight-carrying and other equipment and raising the quality of fully prefabricated construction. At present we are using industrial methods to construct nearly 60 percent of production facilities and up to 70 percent of apartment buildings. This is a high indicator. The mechanization level of some kinds of work is also near the limit. For example, in earth moving work and the installation of construction structures the level is now 99.5 percent.

Consequently, to ensure a further growth in labor productivity by using only these factors is no longer possible; for this reason it is now necessary to concentrate attention on remote reserves, which previously were not the most important and less noticeable. Essentially new progressive decision are needed which respond to the present-day technological level and scales of construction and which make it possible to substantially reduce labor expenditures in the sector.

In July 1980 the Central Committee of the Belorussian Communist Party and the BSSR Council of Ministers approved the basic directions for further increasing the technical level and growth in labor productivity in construction for the Eleventh Five-Year Plan. This document defined measures for expanding production and the massive use of efficient materials and designs of maximum plant readiness of highly productive means of mechanization of work, the packaging and use of containers of manufactured articles, for improving the use of available equipment and also the further improvement of management, the organization of production and labor, for training and raising the skill level of personnel, for improving their working conditions and standard of living, and for creating stable labor collectives. The complete and timely accomplishment of these measures can provide a further increase in labor productivity for the five-year plan by approximately 19 percent.

The measures call primarily for the development and strengthening of the production base of capital construction based on the very latest developments in technology. Quite a bit is being done in Belorussia to organize the manufacture of new materials and structures and to increase their plant readiness, but not yet in the amounts required. We are taking active steps to make extensive use of light metal structures, articles of precast reinforced concrete articles made of porous fillers and to introduce the use of gypsum and articles made of gypsum and also other progressive materials, which make it possible to sharply reduce the labor intensiveness of work. We are giving the most attention to the completeness of the articles and structures that are supplied.

However, we must confess that the technical level of many enterprises of the construction industry lags behing present-day requirements. For this reason the BSSR Gosstroy has been given the task of working with the construction ministries and agencies to develop a set of technical and organizational measures to modernize many precast reinforced concrete plants during the Eleventh Five-Year Plan. Automated control systems, new equipment and progressive technological processes are to be adopted at these enterprises.

The comprehensive mechanization of construction and installation work is another important trend in the growth of labor productivity. For now this problem is being solved slowly; and the achieved results are not satisfying us. There is a need for a more complete engineering preparation of production, for the renovation of the machinery and equipment park, and for raising the level of the technical maintenance of the park. In view of these circumstances, the Party, governmental and economic organs of Belorussia are now getting down to work.

While obtaining an improvement in the use of machinery and equipment from the managers of the construction and installation organizations, they are simultaneously assisting the construction projects in manufacturing modern standard-sets of tools and rigging. Such work is particularly active in Gomel' Oblast, where the Oblast Party Committee is constantly monitoring the manufacture of means of mechanization both in oblast enterprises and elsewhere.

Management, the organization of production and labor and the creation of stable collectives need to be further improved. A mandatory requirement for achieving success is to educate personnel on efficiency, responsibility and initiative. The present shortcomings in the sector can largely be explained by the still considerable turnover of personnel and poor planning and executive discipline. For this reason a set of measures is planned to improve work with personnel.

In the Eleventh Five-Year Plan the importance of increasing labor productivity is increasing because the scale and tasks of construction are growing and becoming more complicated. To fulfill the planned program, we must either attract an additional work force or sharply increase labor productivity. The first approach is unlikely, of course. And not just because in the Belorussian SSR as in the rest of the Soviet Union on the whole there is a shortage of personnel, but also because this approach runs counter to the intensification of economic management. A decisive trend in raising the efficiency of production is to speed up scientific-technical progress.

Life persistently requires a more active and well-guided Party influence on all stages of scientific-production cycle. The Party organizations of the construction ministries and agencies, the scientific institutions and enterprises of the construction industry are called upon to harmoniously solve questions having to do with carrying out research and experiments, adopting new developments, while using the entire arsenal of the means of organizational and educational work. To lay the foundation today for the draft plans for the construction and modernization of enterprises using the latest achievements of science and technology means to provide an advanced level of production for the future.

To study and broadly disseminate advanced experience in raising labor productivity, we are organizing local level target seminars. Thus, republic-level seminars have been held in Minsk, Vitebsk and Brest oblasts, at which ways to increase the quality of construction, to adopt progressive means of mechanization and standard-sets of tools, and to raise the plant readiness of construction materials, articles and sections were reviewed. The Central Committee of the Belorussian Communist Party has made special decisions based on the results of these seminars; it is now constantly monitoring their fulfillment.

The growing scales of construction and complicated economic ties have required that more attention be given to matters of planning and management. In recent years in the Belorussian SSR a considerable amount of work is being done in this direction. The famous economic experiment that was conducted in the BSSR Ministry of Industrial Construction has proven its vitality. In the Eleventh Five-Year Plan this experience will receive extensive dissemination. The further improvement of the management of the sector calls for it to be switched to a two and three level management system and for the creation of large associations.

The oblast Party committees, the city Party committees and the rayon Party committees and the primary Party organizations of Belorussia are working hard to restructure the economic mechanism of the sector. The recently held 29th Party Congress of the Belorussian Communist Party emphasized the need to speed up the switch to intensive methods of economic management in construction based on the more active use of qualitatively new highly efficient technical and organizational decisions. The discovery of available opportunities and reserves for further raising labor productivity in the sector will in the future be an essential task for the Party, government and economic organs, the construction, designing and scientific-research organization of the Belorussian SSR, as required by the draft of the CPSU Central Committee for the 26th Party Congress.

Specific Measures

Moscow STROITEL'NAYA GAZETA in Russian 18 Feb 81 p 2

/Article by B. Yevtukh, chairman of the BSSR Gosstroy: "Growth Rates and Factors"7

/Text7 The following articles discuss the work being done by the BSSR Gosstroy, the builders, Party and trade union organizations to raise labor productivity in construction.

Thirteen percent - the percentage by which the BSSR Ministry of Industrial Construction has managed to reduce the time periods for erecting projects due to the adoption of the brigade contract and the continuous flow construction. The amounts of unfinished construction have approached the norm.

Three thousand two hundred units of highly productive means of mechanization were manufactured for the construction workers in the Belorussian SSR during the Tenth Five-Year Plan. In the Eleventh Five-Year Plan 260 pumping units will be manufactured to apply bitumen on roofing, 125 spackling machines, 480 pumps for applying paint, 50 mobile plastering units, 200 motor carts, 20 concrete mixer vehicles and many other machines and mechanisms.

Thirty-six percent - such is the anticipated growth in labor productivity at enterprises of the construction industry of the Belorussian SSR in the Eleventh Five-Year Plan through improving the organizational-technical layouts of production.

Forty new kinds of materials have been assimilated by the BSSR construction materials industry during the last 10 years. More than 20 highly efficient kinds of manufactured articles are to be assimilated in the Eleventh Five-Year Plan.

Twenty percent is the amount of the increase during the past five-year plan in the capacity of construction machinery park.

> Eighty percent is the level of industrialization of the installation and specialized work at Belorussia's construction projects.
>
> One million more square meters of ceramic tiles will be manufactured for the external facing of buildings.
>
> Two million four hundred and forty thousand square meters more large tiles for floors will be produced.
>
> One hundred sixty six thousand square meters more housing space will be constructed.
>
> Thirty thousand builders will be provided with hot meals directly on the job.

When we speak about the need to raise labor productivity in construction, it is wise to ask the question: at what technical level? If we are talking about the level of the first technological production lines for the production of reinforced concrete and wet finishing methods, this will suit no one. Only the most modern, at the level of the best foreign models, technical standard of our production base will make it possible to noticeably increase the output and labor productivity indicators throughout the sector on the whole. This is why in the Tenth Five-Year Plan in the Belorussian SSR more than 1.25 billion rubles were invested in the development and improvement of the construction base. This was significantly more than in the Ninth Five-Year Plan. These means were used to build well-equipped large panel house building plants in Minsk, Bereza and Bobruysk, the Molodechno light metal structures plant, the Petrikovskiy and Novolukoml'skiy ceramic gravel plants, and a wood finishing combine in Gomel'.

During the years of the Tenth Five-Year Plan in the Belorussian SSR 3,200 units of highly productive means of mechanization of construction and installation work were manufactured, including - powerful trailers, concrete mixer trucks and concrete carriers, hydrocranes, mobile paint and plastering stations. The percentage of manual labor was noticeably reduced. The adoption of the brigade contract, the continuous flow line construction and the improvement of the organizational structures have made it possible, for example, in the BSSR Ministry of Industrial Construction to reduce the time periods for the construction of projects on the average by 13 percent and to bring the amounts of unfinished construction work into the normal range.

But these achievements are inadequate to handle the growing assignments in the Eleventh Five-Year Plan for capital construction in the Belorussian SSR. For this reason in the measures for raising the technical level of construction, which were developed by the BSSR Gosstroy and the BSSR Gosplan and approved by the Central Committee of the Belorussian Communist Party, are outlined the directions which we will follow to ensure the needed growth in labor productivity. Here is a brief description of our program.

Materials: The task has been set to reduce by 1.5 times the labor expenditures in construction by raising the degree of plant readiness of materials and structures, adopting an efficient technology for laying floors, roofs, columns and partitions. For example, we will manufacture reinforced concrete structures in mechanized and automated production lines using the vibration-free method with a large savings in reinforcement steel and energy resources. We plan to assimilate the erection of buildings in rural areas using large panels received from mobile dismountable assembly plants. The capacity of the construction industry will be increased by reequipping and modernizing 120 enterprises, for which scientific-technical studies have been compiled.

Equipment: The republic's construction ministries and agencies have been tasked with manufacturing in sub-agency enterprises standard sets with painting units, plastering equipment, machinery for roofing work, and self-propelled machines for polishing mosaic floors.

The Belorussian machine-building enterprises are also making a considerable contribution in this area. On the list of means of mechanization are 100 trailers with a carrying capacity of 40 to 60 tons, 260 pumping units for applying bitumen to roofing, 125 spackling machines, 480 pumps for applying paints, 50 mobile plastering stations, 20 concrete mixer vehicles and many other machines and mechanisms.

Organization of labor: We will do everything we can to develop such proven methods as the brigade contract, the Orlovskaya "continuous flow line", the Pouzlov method of constructing large projects. In the Eleventh Five-Year Plan we will create structurally new construction and installation associations consisting of general construction subelements and specialized organizations, enterprises of the construction industry and technological transport, and the services for production and technological assembly.

The realization of this program will make it possible in the Eleventh Five-Year Plan to reduce labor expenditures in construction by more than 6 million man-days, to free nearly 26,000 workers for other tasks, and to raise labor productivity in the sector by more than 19 percent.

We understand that the effectiveness of our program will depend upon how we use economic levers in its solution. Here we must point out a circumstance, which, in our opinion, affects the interests of the Soviet Union's entire construction sector. We feel that the economic stimulation of the participants of construction must be directly dependent upon the reduction in the use of materials and labor. To do this it is necessary to introduce stable prices for a unit of completed construction product (a square meter of housing space, a seat in a school, a cubic meter of an industrial building, etc.) with a breakdown into classes of similar buildings characterizing their service life, degree of comfort and other operational properties. The use of stable (for at least 5 years) prices will motivate the builders and designers to use progressive design solutions, and, subsequently, will lead to a growth in profits. The additional profit, created in this manner, must be distributed between the state budget, the contractor, the designer and the customer. Their share will then be used as a source for a more active material incentive program in the collective.

Stable prices for a unit of capacity of finished construction product will promote, in our opinion, a strengthening of economizing and the transfer to the planning of indicators, which determine the technical level, quality and labor intensiveness of construction.

Construction Materials

Moscow STROITEL'NAYA GAZETA in Russian 18 Feb 81 p 2

/Article by V. Bil'dyukevich, Minister of the BSSR Ministry of the Construction Materials Industry: "The Sector is Developing Dynamically"7

/Text7 The BSSR Ministry of the Construction Materials Industry has fulfilled the five-year comprehensive plan for the modernization, expansion and reequipping of existing enterprises. More than half of its capital investments were used for these purposes.

As a result within a short period of time we have managed to increase the production of materials, the use of which in construction provides a substantial increase in labor productivity. Included here are stressed cement, which makes it possible to significantly simplify and lighten the erection of concrete reservoirs and underground structures; fused ruberoid, the use of which sharply speeds up the waterproofing of roofing; five-meter length asbestos-cement pipes; large facade slab; facing panels using dry gypsum plaster; and other effective materials.

Altogether during the past ten years we have assimilated the production of more than 40 new kinds of materials and structures; and the production volume has increased 2.2-fold. The growth in the production of effective construction materials will be ensured in the future by reequipping the enterprises.

In the production association Minskstroymaterialy /Minsk Construction Materials Production Association7 they have begun to produce sheet rock slabs with an increased rigidity. They plan to significantly increase the production of decorative acoustic tiles, which are called "akmigran" and "silakpor". Their use reduces labor intensiveness of construction work and makes it possible to avoid the use of "wet" processes and raise labor productivity in putting up suspended ceilings. Through the modernization of technological production lines there will be a 1.5 million square meter per year increase in the production of linoleum in the Gomel'stroymaterialy production association.

At the enterprises of the BSSR Ministry of the Construction Materials Industry there is now underway a planned increase in the production of all types of ceramic tiles, while nearly doubling in each subsequent five-year plan due to the modernization and expansion of enterprises. Thus, in the Minskstroymaterialy Production Association five flow-line conveyor production lines were put into operation. Now they are installing a production line with a capacity of one hundred square meters per hour.

At the Brest KSM [construction materials combine] there are plans to construct a turret spray-drying chamber, which will make it possible to more extensively use local sources of raw materials. From local raw materials we are organizing the production of facade tiles at the Rechitsk ceramic pipe plant. The manufacture of ceramic tile for the external facing of buildings will increase by one million, and the manufacture of large-sized ceramic tiles will increase by 2.4 million square meters.

Through the technical reoutfitting of brick plants we plan to substantially increase the production of hollow and facing bricks. To obtain ceramic wall and facing materials of a high quality from low grade raw materials we are developing and adopting new technological processes. Thus, at the Obol'skiy ceramic articles plant of the Vitebsk Keramika association, which was put into operation in 1977, they are using the slip casting preparation of raw materials and the semidry pressing of articles. This has made it possible to obtain manufactured articles of precise sizes, with a high durability and frost resistance.

At the Grodno glass plant starting in 1982 there are plans to produce large-sized units of glass in place of small units and prior to the end of the five-year plan it will switch entirely to the production of the large units. A comprehensive plan calls for the organization of the production of dry gypsum plaster of an improved quality and for increasing the production of decorative panels made of dry gypsum plaster, finished with a coating of reinforced and patterned glass, glass pipes and other kinds of progressive materials.

Serious attention is being given to increasing the plant readiness and completeness of product. Panels of cellular concrete are being manufactured with an architechtural finish of the surface and assembled from panels of solid concrete for the inner walls. More than 65 percent of sheet glass is being delivered in sizes ordered by the builders. All acoustical materials are being used for the installation in conjunction with elements and parts for suspended devices. This makes is possible to reduce the percentage of manual labor at the construction projects.

By creating new capacities we plan to organize the manufacture of new materials capable of improving the quality of work and to increase productivity in construction. Thus, at the Volkovvysktsementnoshifer [Volkovvysk cement and slate roofing] association they will create the capacities to produce large-sized flat pressed sheets of asbestos cement. At this same association they will begin the construction of a plant capable of producing 500,000 square meters of asbestos cement extrusion panels per year. At the Osipovichi roofing paper and ruberoid plant they will create capacities to produce 15,000 tons of bitumen polymer water-proofing compound.

The delivery of packaged construction materials has reached 60 percent and the percentage continues to increase. This includes all clay brick and drainage pipes, nearly all wall panels and the majority slab insulation and ceramic tiles. The delivery of glass and asbestos cement pipes, sheet rock slabs, flat roofing paper and other such materials will be done in containers for the most part.

During the years of the Eleventh Five-Year Plan it is planned to assimilate the production of 22 new kinds of effective materials.

To accomplish the planned measures requires an appropriate increase in production capacities. Unfortunately, this is prevented by the unsatisfactory provision of equipment and its poor quality. Up until now the USSR Ministry of Construction, Road and Municipal Machine Building has not created the complete set of equipment for the production of wall panels. There are no automatic brick setters into oven carts, automatic equipment for packing finished product or powerful presses. For this reason there is still a great deal of manual labor in the brick industry; it is being reduced very slowly.

We allow for the complexity of these problems and understand that they must be solved in the Eleventh Five-Year Plan on a more active basis.

Summary

Moscow STROITEL'NAYA GAZETA in Russian 18 Feb 81 p 2

/Article by I. Ishchenko, Deputy Chairman of USSR Gosstroy: "Valuable Experience"7

/Text7 Today STROITEL'NAYA GAZETA acquaints its readers with the very interesting and useful experience of the Belorussian SSR in creating and executing a program for raising the technical level and for a growth in labor productivity in construction. V. I. Lenin wrote: "Labor productivity in the final analysis is the most important element in the victory of the new public order." It is of particular importance today. The rapid growth in labor productivity is the most generalized indicator of the effectiveness of public production.

Now as never before the problem of labor resources is acute. At the 25th Party Congress Comrade L. I. Brezhnev pointed out that: "We must not rely on attracting an additional work force, but only upon increasing labor productivity. The sharp reduction in the percentage of manual labor, the comprehensive mechanization and automation of production are an indispensable condition of economic growth."

In the Tenth Five-Year Plan in Soviet construction progressive methods for erecting projects were adopted; and new effective materials and structures were used. At the same time we observed a negative phenomenon: the growth rates of labor productivity fell. Thus, while in 1976 labor productivity increased by 3.1 percent, in 1980 the growth rate was only 1.2 percent.

The draft of the Basic Directions calls for an increase in labor productivity in construction of 15 to 17 percent in the Eleventh Five-Year Plan. To achieve this growth, more complete use must be made of reserves. How can we approach this target? Belorussia's experience provides a specific answer to this question. I want to again emphasize the basic ways of solving this task which were developed by the Belorussian builders: a) increasing the level of industrialization of construction production through the use of the mass use of effective materials and structures of a high plant readiness; b) the comprehensive mechanization of construction and installation work; c) improving management and the organization of production and labor, training and raising the skill level of personnel, and improving the conditions of labor and standard of living, and creating stable labor collectives.

Detailed measures have been outlined in these directions. The ministries, agencies, enterprises and organizations, and not just the construction organizations, have been given assignments, which specify what they are to do, in what amount and within what time period. The fulfillment of the measures will make it possible to raise labor productivity in Belorussia's construction sector by 19 percent during the Eleventh Five-Year Plan.

The experience of developing and executing such a comprehensive program of measures deserves to be disseminated in other regions of the Soviet Union. First of all, the program is aimed precisely at those reserves, the use of which can lead to an energetic increase in labor productivity. Secondly, it is properly linked with the target and scientific-technical programs which makes it possible to successfully combine sectoral and territorial planning.

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SCIENTIFIC-TECHNICAL PROGRESS IN HEAVY, TRANSPORT MACHINE BUILDING INDUSTRY

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 4, 81 pp 20-29

[Article by V. Zhigalin, Minister of Heavy and Transport Machine Building, Hero of Socialist Labor: "Scientific-Technical Progress in the Industrial Sector: Goals, Unsolved Problems and Prospects"]

[Text] "The basis of scientific-technical progress -- is the development of science --" stressed L. I. Brezhnev, General Secretary of the CPSU Central Committee, in his report to the 26th party congress. "But primarily machine building can open wide the doors to the new. Machine building is called upon without delay to assimilate and incorporate the advanced concepts created by science and engineering into highly efficient, reliable machines, devices and technological lines."*

The basic directions of the economic and social development of USSR in 1981-1985 and the period up to 1990 specify an increase in the productivity of labor in the industry by 23 to 25% and because of this obtain a greater than 90% increase in output. This problem can be solved by the wide introduction of the newest, highly productive machines and automatic lines in the industrial enterprises of the country.

In the 11th Five-Year Plan period, Mintyazhmash [Ministry of Heavy and Transport Machine Building] will continue the work on raising the technical standard of the produced equipment, its unit power, reliability, useful life, reducing at the same time the actual and unit metal content.

The heavy and transport machine building industry today consists of six independent subsectors: metallurgical, mining, hoisting and transport material-handling, diesel engine, RR car and diesel machine building. The industrial sector's enterprises give the national economy practically all the equipment to produce ferrous and nonferrous metals. The reequipment of modern mining complexes, the petroleum, gas, coal and geological prospecting industries, the development of RR and water transport, the mechanization of hoisting transport material handling materials handling and other heavy work depend decisively on the technical standard of our machines. The Mintyazhmash plants produce machines and equipment that determine the rate of growth of the productivity of labor and the technical progress in the most important sectors of the economy.

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* PRAVDA, 24 February 1981.

The volume and qualitative indicators of our machines and equipment has improved considerably during the 10th Five-Year Plan period. Over 900 new types were created and are being produced serially. The use of this equipment in the national economy of the country saved over 3.5 billion rubles. Today, this industrial sector produces over 600 types of machines and equipment awarded the State Emblem of Quality, which amounts to half of all products subject to certification. The ratio of the highest category of quality products in the total volume of production exceeded 30% (as against 18.7% in 1975).

Production associations, enterprises, scientific research, planning-design and technological institutes of Mintyazhmash did a considerable amount of work to raise the technical standard of the manufactured products, on creating machine systems that make possible comprehensive mechanization and automation of the technological processes at the users. This industrial sector increases its economic potential and constantly strengthens its scientific-technical base.

The high technical standard, reliability and long useful life of the machines are incorporated at the very first stages of their creation. Designers that develop new samples of machines and equipment include progressive components of future equipment. From year to year, they propose more and more daring and original solutions. It is precisely this that made it possible to create at the ministry's enterprises such giants of domestic machine building as a 65,000 ton press, walking excavators with a crane arm 100 meters long and a bucket capacity of $100m^3$, a fully automated mill for making hollow RR car axles, an installation for drilling exploration wells 15km deep, machines for continuous steel casting, 300 to 400 ton converters, mobile mixers and powerful diesel engines.

In the 10th Five-Year Plan period, scientific-technical programs were developed and adopted for the first time. Unlike the previous coordination plans, they included a full complex of measures at all stages of the "science-production" process, from the idea to the finished product. This new form of planning indicated its high efficiency.

The head scientific research and planning-design organization in metallurgical organization is the VNIImetmash [All-Union Scientific Research and Planning-Design Insitute of Metallurgical Machine Building] . Its scientists and designers along with the Novokromatorskiy mach'ne builders developed in a very short time a fully automated sheet rolling mill "2000" and with the Elektrostal' machine builders -- a special design axle-rolling mill "250." The introduction of this newest highly productive equipment eased greatly the labor of the Cherepovetsk and Dnepropetrovsk metallurgists.

The VNIImetmash, together with the "Uralmash" and "Zhdanovtyazhmash" production associations developed, on a compressed schedule, highly productive converters and continuous casting machines that make it possible to cast steel in a new way and obtain intermediate products in an unconventional way. The introduction of such equipment also changed the structure of steel casting. In the 10th Five-

Year Plan period, the melting of converter steel increased from 19.9 million to 46.3 million tons, while the output of intermediate cast products increased to 15.4 million tons. In the current five-year plan period, the production of the latter will be increased to 35-37 million tons. To implement this intense plan, this industrial sector must supply to the USSR Minchermet [Ministry of Ferrous Industry] enterprises all the necessary equipment. However, its indeterminate position in the question of where and when this equipment will be built destabilizes the work of our scientific research institutes and design bureaus which, in the final account, reflects negatively on the material-technical indicators on the work of the Mintyazhmash enterprises.

In this connection, of special importance is the requirement stated in the Basic Directions on putting into operation fixed capital and production capacities on time. Its implementation must reflect positively on the development of the entire national economy.

In the 11th Five-Year Plan period, the Mintyazhmash outlined the following on metallurgical machine building:

increase the output of continuous casting machines by 1.4 times;

develop and assimilate highly mechanized and automated machines for the production of two-ply and multiply pipes 1420 and 1620mm in diameter for the gas industry;

design and supply special continuous steel casting machines for small capacity metallurgical plants;

develop casting-rolling complexes for the production of merchant shapes, whose use will provide the best utilization of metal by users;

expand the production of technological equipment for vacuuming liquid steel outside of the furnace;

develop coking machines for furnaces with a volume greater than $50m^3$, as well as equipment for obtaining molding coke from noncoking coals;

organize the production of specialized part-rolling mills that produce parts using low-waste technology. These mills provide for a sharp reduction in tolerances in the subsequent machining of the parts and an improvement in the mechanical properties of the products. Forty and 100 such mills respectively will be manufactured for the Mintyazhmash enterprises and other industrial sectors;

develop equipment for powder metallurgy.

The implementation of the outlined program will play a decisive role in raising the productivity of labor at metallurgical enterprises.

In connection with the tasks posed by the CPSU Central Committee and USSR Council of Ministers on improving the planning of the national economy, a number of measures were adopted in recent years to strengthen and improve the work of planning organs. At the same time, the party and the government demand greater activity from the USSR Gosplan and ministries.

Work must be improved on monitoring the implementation of plans for economic and social development, their stability, the efficiency of utilization of fixed production capital, capital investments, material labor and financial resources and on providing an extensive systematic analysis of the progress of fulfilling the state plans; remove more quickly the detected shortcomings in planning; prevent internal and external interindustrial disproportions in the development of individual sectors of the national economy; provide system monitoring of the progress of capital construction in individual sectors and construction sites that are of national economic importance. The USSR Gosplan must strengthen its methodological guidance of the work of economic planning administrations and departments of ministries and services, related to the formulation of plans, by participating in the preparation and implementation of large national economic programs, and in carrying out measures on improving planning and the economic stimulation of production.

The improvement of the quality of planning at all levels will require all ranks of managers to be more exacting of themselves and their subordinates, and punctual discipline.

In view of the growing importance of Siberia and the Far East in the economy of the country and the formation here of large territorial complexes, the role of planning and economic organs in solving the problems of assimilating these regions becomes more important. In this connection, great attention is being given to the creation of mining equipment primarily for extracting and enriching ores and useful minerals, and preparing them for further processing. It will be necessary to increase the output of modern self-propelled drilling rigs, materials handling machines, self-propelled machines on universal chassis for unmanned tunneling of rising drifts and charging machines. During the past five-year plan, the production of equipment for underground mining increased by 35.7%. To mechanize strip mining, highly productive milling cutters are being produced (for drilling blasting holes). The production of 630 to $5000m^3$/hour rotor excavators was assimilated. ESh 40/85 and ESh 100/100 walking excavators and a pit excavator with a bucket capacity of $20m^3$ were developed for strip mining. Series production of high load capacity dump trucks has begun.

The Krasnoyarsk Heavy Excavator Plant must become the main supplier of modern equipment for stripping and mining work. This was stressed in the Basic Directions. This enterprise will become a part of the Kansko-Achinsk fuel-power complex. Its first stage will produce 8 walking draglines with a $40m^3$ bucket capacity and 60 pit excavators with bucket capacities of $12.5m^3$. By the end of the 11th Five-Year Plan period, the enterprise will produce 3 rotary complexes with a productivity of $5000m^3$/hour.

The construction of this high priority facility is given the most attention by the ministry. A comprehensive program was prepared for the most rapid assimilation of the plants' capacities, including the preparation of technical documentation and a supply of the latest equipment for its shops. Great importance is given to the preparation of cadres and construction of housing. As of today, the builders are ahead of schedule on putting the first stage of the plant in operation. However, in order that its construction proceed at the planned rate, it is necessary also in the future to use modern methods of design and construction widely and improve the order of material-equipment supply to the construction site. It is also important to create all the necessary conditions for productive labor and good rest for the builders and future workers of the plant.

The output of equipment has begun at enterprises of the sector for cyclic-flow line technology of mining minerals. Mining-enriching combines of ferrous and nonferrous metallurgy are being equipped with modern OK-306 and OK-520 calcining machines, cone crushers and large volume, high productivity ball mills.

In accordance with the problems of the comprehensive development of the productive forces of Siberia and the fuel-energy base of the country, new types of drill rigs were manufactured for producing petroleum in hard to reach swampy regions. BU-3000EUK installations manufactured by the Uralmash make it possible to drill 16 wells up to 3000 meters deep from one location. Their use reduced the time to remount the installations and the number of service workers. In the 11th Five-Year Plan period, it is planned to produce 90% of the petroleum in Western Siberia by using the new drilling installations.

An urgent order of the time is to increase the level of mechanization of materials handling work and the development of modern automated warehouses. The output of material-handling transport equipment increased somewhat in the last five years, but the demand for it is far from being satisfied fully.

This industrial sector has experimental samples of universal robot-manipulators such as, for example, the MAK-1-50 automatic manipulator developed by the VNIIPTmash [All-Union Scientific Research Institute of Material Handling Transport Machine Building] , designed to transfer products from overhead conveyors to loading positions of technological equipment. Together with the Minelektrotekhprom [Ministry of the Electrical equipment Industry] a design was developed and brought to series production of a 150kg ball-balanced manipulator that makes it possible to mechanize heavy manual operations on metal cutting, forging-press and other equipment.

The use of these machines increases the labor productivity of workers considerably. However, in spite of the obvious economic effect, the introduction of robots does not find support everywhere. Some enterprise managers do not include them in their modernization programs. There are many reasons for this, but the main one is that equipping sections with robots is very complicated and causes considerable lengthening of production modernization schedules. Therefore, some managers take the path of the least resistance under-valuing the final result -- the undoubted advantage from the creating of automated robot sections.

The Basic Directions pose the problem of developing production and of the wide use of automatic manipulators (industrial robots). The comprehensive program of the GKNT [State Committee of the USSR Council of Ministers on Science and Technology] for 1981-1985 instructs the Mintyazhmash to develop and introduce manipulators and equip them with a comprehensive automated transportation-technological system.

It would be an oversimplification to represent the situation as something being achieved by a simple replacement of existing equipment systems by robots. Cases are known of unsuccessful, economically and technically unjustified use of robots in production due to not fully utilizing the possibilities of the new equipment. Therefore, it is extremely important not only to create or acquire industrial robots, but also to develop creatively the entire technological cycle, tying together the actions of the manipulators with the associated technological facilities.

There are also unsolved problems in creating automatic warehousing equipment. There is a saying: "To have a good plant, it is necessary to have a good warehouse." Such a warehouse should, first of all, be equipped with convenient multitier shelving and stacking cranes with automatic control. Each part must lie in its proper place, then the stacker will find it unerringly and deliver it to the warehouseman.

There is still not enough automated warehouse equipment being produced. It is manufactured by the Moscow Experimental-Machine Plant and the Stakhanovskiy Machine Building Plant, whose production capacities are small. Moreover, the Moscow enterprise must also manufacture equipment not characteristic to this industrial sector -- trailers for avaiation container carriers. In the 11th Five-Year Plan period, it is planned to expand the output of automated warehousing equipment and to organize it in a number of other enterprises in the sector also.

The planned economy of our state makes it possible to solve complex problems of a balanced development of the national economy, providing for advanced rates of producing individual types of products on the basis of achievements of scientific-technical progress. One such problem is the production of modern powerful and reliable diesel engines. In the current five-year plan period, the Mintyazhmash enterprises will continue work on developing a new generation of the following locomotives: a two-section 8000 horsepower 2TE121 locomotive, a sectionalized 6000 horsepower TEP75 passenger locmotive, a 4000 horsepower TE125 export locmotive, a TEM-7 switching locomotive, etc.

The diesel engines for various purposes produced by the sector have parameters and characteristics that correspond to modern technical standards. This is attested to by the fact that ten types of the machines were awarded the Government Emblem of Quality.

Our scientific research organizations plan to create vehicular parts with high dynamic characteristics, power installations and drives, and control systems that provide optimal operation of the locomotive and reduced consumption of fuel and oil. A complex of work is planned to increase the reliability of diesel engines and their units, reducing material consumption and improving standardization. All this must improve the quality and competitiveness of the locomotives.

The Voroshilovgrad diesel engine builders developed the 2TE116 locomotive on the basis of which it is planned to create a series of the following machines. It will require a highly trained engineer qualified to do repair and service work. Regrettably, workers of the USSR Ministry of RRs are slow in assimilating this machine. It would seem that its quickest introduction is in our common interests.

Today, the question is posed justly that the Mintyazhmash plants produce too little of RR and highway equipment. Eight plants, five of which are very small, although specialized, are in no position to provide such equipment for the RRs of the country, not to speak of other sectors of the national economy.

Only several years ago, when each RR machine represented an invention of talented loner specialists, it was obvious that one could not count on a serious increase in the output of such machines without their standardization. A centralized design organization was needed which would unite the uncoordinated efforts of weak design departments of enterprises and utilize the rich experience of RR designers.

The Central Design Bureau of Heavy RR and Highway Machines was such an organization. A number of RR and highway machines, which recommended themselves well in operation, were created with its direct participation. These included the SM-3 self-propelled snow plow, the SS-1M grader-snow plow for cleaning switch machine frogs, etc. RR workers participated in their tests. However, the main difficulties in increasing the output of these and other RR and highway machines have still not been overcome due to prolonged modernization.

During the current five-year plan period, 117 new types of mobile transport were created for the USSR Ministry of RRs and industrial transport. They include the TEP70 passenger 4000 horsepower diesel engine with a design speed of 160 km/hour; the TEM-7 switching-export 2000 horsepower diesel engine that makes it possible to reform trains weighing up to 6000 tons; eight-axle 120-ton tank cars; cars to transport grain, mineral fertilizers, hot pellets, commercial grade carbon, peat, coke, etc. All these are highly efficient, modern equipment. Thus, the introduction of specialized cars makes it possible to increase the productivity of labor in materials handling by 3 to 4 times, cargo preservation is improved and a considerable number of workers is freed.

Series production of large containers has begun at the Abakanskiy RR Car Building Plant, which is in process of construction. The importance of this plant was noted in the Basic Directions. With the creation and the putting in operation of the capacities of this plant, the output of main line freight cars needed by the national economy will increase considerably and the problem of producing steel castings will be solved. In accordance with the Basic Directions, the Kolomenskiy Diesel Engine Building Plant, theBryansk Machine Building Plant imeni the 50th Anniversary and the Penza Diesel Plant will be modernized and expanded. As a result, it will become possible to organize the production of new types of diesels with modern technical-economic characteristics and high power, as well as diesel engines for increasing the output of locomotives. Precisely, this important problem must be solved by transport machine building plants: Bryansk, Kolomenskiy, Penza and Voroshilovgrad. By 1985, it is planned to increase the operating life of the engines produced by 30%.

Solving problems related to the development of our enterprises will require certain capital investments. Money allotted to the sector must be wisely distributed and used for purposes of long range development of heavy and transport machine building. The realization of the latest achievements of science and technology, the efficient operation of existing and newly built production capacities, as demanded by the party and government, will make it possible to raise the work of the sector to a new level.

A great amount of attention is being devoted to improving the quality of the products manufactured by this sector's enterprises. In most of them, a comprehensive quality control system operates which produces positive results. However, the ratio of low quality products and, at times, of scrap is still not low enough. An analysis shows that, as a rule, this is due to unscrupulous performance and the low quality of the complementing products. The existing material incentive system for high quality work is not the full solution to the given problem. In the current year, it is necessary to incorporate a comprehensive quality control system everywhere and finish off a corresponding industrial automated control subsystem.

The economic levers for accelerating scientific technological progress in the sector are not as efficient as desired, although there are positive shifts in this area. One of the basic conditions for accelerating scientific technological developments in production is a reduction in the times for carrying out scientific research and planning-design work, at a high scientific level, taking into account the latest world achievements. This is facilitated by the system, introduced in 1972, of planning, financing and economic incentive of work on creating, assimilating and introducing new equipment, based on the principle of continuity and comprehensiveness. The use at Mintyazhmash of topical cards on fulfilling work from the start of investigations to the introduction of their results made it possible to concentrate in one plan document all the necessary data on the work content, the work performers, achievement schedules, resources and the economic effect obtained by the national economy as a result of using the new equipment.

The new system of planning, besides increasing continuity and comprehensiveness, provided an essential improvement in the organization of planning, an increase in the responsibility of the customers and executors for the results of the work being done. Its characteristic feature is also a transfer from planning the activity of scientific organizations to planning the development of a concrete comprehensive theme.

The basis of the new planning system was a new order of financing scientific investigations and developments, and of the introduction of their results into production. A single fund was established for the development of science and technology, whose essence is as follows. Three funds of economic incentive are established in science research institutes and design bureaus, as well as in industrial enterprises. They are: material incentive; social-cultural measures and housing construction; organization development. However, unlike industrial enterprises, where the basic fund-forming component is profit, here these funds are formed from deductions from profits of the enterprise because of the reduction in the production cost of the product when the novelty is introduced, deductions from increases in the wholesale prices for the new product, etc. The new system made it possible to place the incentive for scientific work in direct relationship to their profitability to the national economy. The further development and improvement of this system is an important reserve and is one of the basic directions in the economic activity of the sector in the 11th Five-Year Plan period.

The problem of the most rapid creation and introduction of new equipment in the national economy is related to raising the technical standard and how well the enterprises producing it are equipped with machinery and facilities. In the area of raising the technical standard of production, a great amount of work was done in the past five-year plan period: new technological processes were assimilated and modern automation and mechanization facilities were created.

Some 80 comprehensive sections and flow lines were introduced in the mechanical assembly production. Some 66 general plant and shop warehouses were mechanized, and the use of standardized and specialized packing for hoisting and transport material handling and warehousing work was expanded.

Plasma cutting, pulse molding, electron beam and butt-contact welding, electroslag remelting, laser technique -- all these modern technological processes are being used constantly in our enterprises and have a tremendous effect. For example, the introduction of electroslag remelting saves 1.5 times the metal with a simultaneous increase in its quality and a reduction in labor for manufacturing parts. Thus, the reequipment of enterprises is very beneficial to the sector. In the 11th Five-Year Plan period, a broad program is outlined for the modernization of a considerable part of the outdated production facilities.

In accordance with the decisions of the October (1980) Plenum of CPSU Central Committee, the [illegible] began work on attracting industrial defense sectors to disseminate and introduce the latest high productivity technological processes in our enterprise. An agreement was reached with appropriate ministries to provide the Mintyazhmash in this five-year plan period with special metal-cutting machine tools with ChPU [Programmed Numerical Control] , "Kristall" plasma cutting machines and industrial robots. A program was outlined for joint work on developing and introducing high power technological lasers. This is only a beginning. We expect great results from this joint activity.

One urgent problem is to reduce the number of workers doing manual labor. The slogan of machine builders is "Manual labor -- on the shoulders of machines!" During the 10th Five-Year Plan period, over 19,000 persons were changed over from manual to mechanized work in the sector which reflected favorably on the productivity of labor and the quality of work. However, the share of manual labor still remains high, especially at the Soyuzvagonmash and Soyuzdizel'mash enterprises. A year ago, a comprehensive program was developed in the sector on reducing manual labor in the five-year plan period that foresees the changeover of more than 12,000 workers from manual to mechanized work.

Recently, in heavy and transport machine building, there is being implemented especially intensively the automation of technological processes in machining. In 1980 alone, 257 metal-cutting machine tools with ChPU were introduced. Their total number now reached 1400 units. To provide optimal operating conditions and fuller loading, the machine tools are grouped in technological sections. There are 40 such sections. The problem is to obtain the greatest yield from such machine tools. However, in a number of plants, they are being used extremely inefficiently.

The efficiency of the work in the sector also depends to a considerable extent on improvement in the management of the enterprises. A great auxiliary reserve in this is the use of the latest computers and organizational equipment. On their basis, it becomes possible to introduce scientific control methods using automated control systems for enterprises and associations.

In the 10th Five-Year Plan period, the shift coefficient of metal-cutting equipment decreased. Therefore, comprehensive measures are being developed in the ministry to improve the situation. Special stress is made on restraining the growth of the machine tool pool by using universal equipment, by lengthening the service life of the existing machine tool pool, by reducing the idle time due to unplanned repairs and by fighting against shortcomings in the organization of production and labor. In accordance with Basic Directions, great attention will be devoted to the most rapid introduction of high productivity technological equipment and machine tools with ChPU.

An urgent national economic problem is the fight to save metal. In the 11th Five-Year Plan period, the unit consumption of rolled ferrous metals in machine building must be reduced by not less than 18 to 20%, of steel pipes -- by 10 to 12%, of rolled nonferrous metals -- by 9 to 11%.

The experience of advanced enterprises shows that these goals are realistic. But our designers and technologists will have to do a great deal of work to implement them. The Mintyazhmash is one of the few machine building ministries where the metal consumption coefficient is equal to 0.786 and for several types of products -- to 0.8 - 0.9. This high level was reached at the enterprises by low-waste technology, by producing parts by rolling (due to using machine tools and presses of the VNIImetmash design), and the use of automatic machines for the efficient laying out of the rolled stock.

Every year, the sector saves 12,000 tons of metal in machining car axles, obtained by a new method of cross-helical rolling (previously, car axles were manufactured by free forging with large tolerances for machining, and metal losses reached 40% of the total weight of the initial forging). This is a tremendous saving. Moreover, putting in operation the "250" axle-rolling mill made it possible to solve the problem related to the scarcity of car axles.

Another reserve for saving metal is reducing the unit metal consumption of equipment. Equipment appeared in recent years, whose unit metal consumption is lower than modern samples abroad. These are the pit and walking excavators made by the "Uralmash," the electric pipe welding machines made by the "Elektrostal'tyazhmash" Production Association, etc. Our plants, in cooperation with the VNIImetmash, are manufacturing highly efficient metallurgical equipment on which rolled metal is produced with minimal tolerances, of higher quality and precision, which facilitates greatly its saving in the maching which follows.

In the 10th Five-Year Plan period, much metal was saved in the sector as a whole. However, much is still to be done. Therefore, in the new five-year plan period, the problem is moved out to the first priority. It is necessary to reduce metal scrap waste in chips sharply when machining parts. This should be facilitated by rebuilding intermediate product production, changing over to progressive types of intermediate products and the wide introduction of low-waste technology.

In accelerating scientific-technical progress, of the highest importance, is the efficient and fruitful creative activity of the industrial institutes in the sector. Tens of thousands of scientists-researchers, designers and technologists work in the sector. Their efforts achieved much that is useful and valuable. But demands made on the quality of modern equipment increase year after year. The head institutes should give special attention to the standardization of the manufactured machines and equipment, as well as to the creation of specialized technology in their manufacture.

The all Union Industrial Association for the Production of Mechanization Facilities and Technological Equipment [VPO] combines seven technological institutes, three experimental plants and has almost 7000 workers, most of whom are experienced specialists. It is precisely the VPO and the institutes that must keep track that any modernization has an economic benefit. Yet, some scientific developments do not produce an economic effect or have poor results. Much is to be done also on reducing the man-hours per job of the products, changing to a low-waste technology, freeing workers from manual work, and creating and incorporating new in principle technological processes and means for comprehensive mechanization and automation.

Frequently, unsubstantiated changes or additions are introduced into the subject plans of scientific developments. The experimental base of institutes is not developed enough. They are not doing everything for the fastest introduction of progressive technological developments into production. A great minus in the work is long delay in the changeover to the production of RR cars with roller bearings due to the unpreparedness of the production facilities at car building plants. Concrete conditions are being created to eliminate these shortcomings in the sector.

Competition among ITR [Engineering-technical workers] developed on the initiative of the scientific technical workers of the Uralmash must play an important role in the accelerated realization of novelties. It is called upon to raise the quality of scientific research and planning-design developments and accelerate the process of their introduction.

The qualitative composition of engineering-technical workers in the sector improves year after year. This is facilitated by the hard line carried out on promoting experienced specialists with proper higher education to all leading positions. Enterprises and institutes are staffed with qualified cadres that know their business well. Over 90% of ITR consist of graduated specialists.

Implementing plans always and in the final account depends on people. By assigning great importance to the efficient utilization of labor resources, the ministry is doing a great amount of work on reducing working time losses and the introduction of progressive forms of collective labor. Brigade forms of labor are widely distributed and are solidly approved, although not all their possibilities have been detected yet. In this connection, of great interest are the materials of the all-union seminar held in Kaluga on the exchange of experience in the development of the brigade form of organization and stimulation of labor. Attention to this in the heavy and transport machine building, as well as in other sectors, was strengthened as we entered the eighties, when it is necessary to complete the changeover of the economy to tracks of intensive development and raise sharply the productivity and quality of labor.

At present, there are over 20,500 comprehensive brigades in the sector that unite 56.7% of all workers. There are also enterprises where the brigade form has become the basic one. Among them -- the "Elektrotyazhmash" Production Association and the following plants: the Yuzhno-Ural'skiy Machine Building, the Gorokhovetskiy Hoisting Transport Material Handling Machine Building, the Dnepropetrovskiy Metallurgical Equipment, etc.

Not all brigades work equally efficiently but, without doubt, collective forms of labor -- are very promising and economically beneficial. In the 10th Five-Year Plan period alone, for example, the brigades saved about 8 million rubles.

The basic directions for the economic and social development of the USSR in 1981-1985 and the period up to 1990 adopted at the 26th party congress, focuses the attention of the workers on fruitful, highly productive work. This document became the all-people program for the new stage of communist construction in our country.

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